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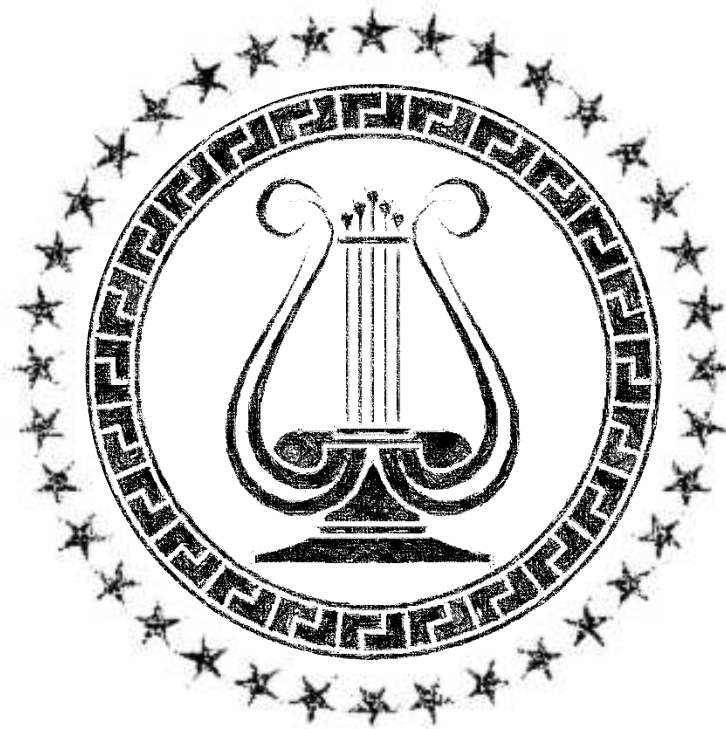
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# STAR MUSIC

The ancient idea of cosmic music  
as a philosophical paradox



by

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## Abstract

This thesis regards the ancient Pythagorean-Platonic idea of heavenly harmony as a philosophical *paradox*: stars are silent, music is not. The idea of 'star music' contains several potential opposites, including imagination and sense perception, the temporal and the eternal, transcendence and theophany, and others. The idea of 'star music' as a paradox can become a gateway to a different understanding of the universe, and a vehicle for a shift to a new – and yet very ancient – form of consciousness. The ancient Greeks had a holistic form of consciousness, which was continually intermingling with a transpersonal dimension. This ancient state of consciousness was related to a *musical* understanding of the world, the Pythagorean-Platonic experience of the universe as an ordered *cosmos*.

My research is approached from two angles, namely from the history of ideas and from musicianship, exploring how music is reflected in the world of thought. By reflexive re-reading of the sources, new insights into the nature of musical consciousness are explored. The idea of 'star music' can be found throughout the history of music and thought in the West, including Plato's works and that of other ancient philosophers, through the Middle Ages, the Renaissance, the Romantic era and the twentieth century up to contemporary New Age music.

As a conclusion, the paradox of 'star music' is connected to an experience of a shared transcendent meaning of music, which can be present in the moment of a musical performance. 'Star music' is a *living* paradox.

## 1. Introduction: the paradox of ‘star music’

Pythagoras conceived that the first attention that should be given to men should be addressed to the senses, as when one perceives beautiful figures and forms, or hears beautiful rhythms and melodies. Consequently he laid down that the first erudition was that which subsists through music’s melodies and rhythms, and from these he obtained remedies of human manners and passions, and restored the pristine harmony of the faculties of the soul.

(Iamblichus *Life of Pythagoras*, 15; Guthrie 1987, 72)

Both music and philosophy have always attracted me. At university, I studied medieval Platonism, and at the conservatoire I learned to play the saxophone. Although they were mutually exclusive realms of activity, it seemed to me that philosophy and music were ultimately about the same thing, namely an awakening to a ‘true self’.<sup>1</sup> Perhaps this idea was nourished by growing up in the 1960s, when music was conveying a strong message of a new form of self-awareness.<sup>2</sup> Later in life, I felt that this intuition demanded a thorough investigation. For that, I needed both intellectual reflection and artistic practice. I looked for music that expressed ideas, and ideas that expressed music. The latter I recognized in the ‘musical’ philosophy of the ancient world, founded on the insights of the philosophers Pythagoras and Plato.<sup>3</sup> At first sight, these ideas may seem out of date; yet I will argue that, when re-read in a reflexive way, ancient philosophy can be a gateway to a new, musical understanding of the universe. This thesis is an exploration of the relevance of ancient philosophy for a practice of music, which aims to bring about a new – and yet very ancient - form of *musical* self-consciousness. However, it is questionable whether such an experience can be adequately expressed in words.<sup>4</sup>

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<sup>1</sup> On ‘awakening’, see Steve Taylor (2017) *The Leap. The Psychology of Spiritual Awakening*.

<sup>2</sup> On the music of the 1960s, see Peter Hamel (1978) *Through Music to the Self*.

<sup>3</sup> With ‘the ancient world’ I refer to the age of classical antiquity, from the eighth century BCE to the sixth century CE. This roughly coincides with the practice of Hellenic music (West 1992, 384). As this thesis takes as its point of departure the Greek philosophy of music, it is focussed on the Western world, excluding theories in other regions. In the Indian, Chinese and Japanese traditions there are very interesting parallels to the developments in the West, to which I will sometimes refer, signalling the global nature of these ideas. Because Jewish and Arabic theories and music do not originate in Greek culture, they are also beyond my focus.

<sup>4</sup> As musicologist David Clarke puts it: ‘description of music can be deceptive as it relates to another mode of consciousness’ (in Clarke 2011, 198).

## Star music

The philosopher Pythagoras is said to have heard the music of the stars, a harmony that the heavenly luminaries produced. The ancient Greeks believed that ordinary humans did not notice this music, because it was in their ears from the moment of birth, but the semi-divine Pythagoras could hear it (Aristotle *De Caelo* 290b).<sup>5</sup> For more than two thousand years this belief persisted, which I call ‘faithful re-reading’ of the ancient idea.<sup>6</sup> However, stars emit light, not sound; they are forever silent. From the eighteenth century on, this general belief in the ‘harmony of the spheres’ faded away. In the Middle Ages and the Renaissance people still believed the Pythagorean myth, but in the era of the Enlightenment scientists dismissed it as erroneous, which I call ‘rational re-reading’. This shift in cosmological thinking may be seen as a transition from medieval faith to scientific reason (Lewis, 1964).<sup>7</sup> Unfortunately, science has not replaced the discarded ancient sacred cosmic order with a new sense of the meaning of life; to mechanistic science, the universe is governed by meaningless physical laws. The ontological break in the development of Western thought has resulted in a persistent struggle between faith and reason. This thesis examines a third option beyond faith and reason, namely to explore ‘star music’ as a profound philosophical *paradox*. A paradox, a seemingly contradictory statement, can lead to a synthesis beyond right or wrong, beyond faith or reason.<sup>8</sup> The idea of ‘star music’ contains imagination and sense perception, music and silence, motion and stillness, the temporal and the eternal, transcendence and theophany, and perhaps many more opposites.<sup>9</sup> Below I will argue that, by a ‘reflexive re-reading’, the paradoxical

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<sup>5</sup> For a general introduction to the history of the Pythagorean idea of the music of the spheres, see Joscelyn Godwin (1993) *The Harmony of the Spheres* and Jamie James (1993) *The Music of the Spheres*.

<sup>6</sup> On re-reading, see below, page 8.

<sup>7</sup> C.S. Lewis has pointed this out in his book *The Discarded Image*. However, there is no clear sign of a related ontological break in the historical development of music.

<sup>8</sup> Professor Roy Sorensen takes the philosophical paradox to be a development from the riddles of Greek folklore and divination (Sorensen 2003, xi). Greek philosophers were very fond of paradoxes; Socrates, in his role as mental midwife (Plato *Theaetetus* 150), employed the paradox as an instrument of liberation from ignorance (Sorensen 2003, 66).

<sup>9</sup> To the best of my knowledge, I am the first to treat the Pythagorean idea of ‘star music’ consistently as a paradox. I have come across *Revisiting the ancient musical scale and the paradox of Pythagoras* by Michael O’Halloran (2004), online published by Lulu.com. In the preface, O’Halloran argues that a paradox in ancient Greek means ‘something unexpected’, ‘a transmission of teachings’, ‘contrary to opinion, unexpected, strange, marvellous’. That is not a contemporary, English meaning of the paradox. He argues that

idea of ‘star music’ can become a gateway to a different understanding of the universe, and a vehicle for a shift in consciousness.<sup>10</sup>

### *Cosmic music*

The title of this thesis, ‘star music’, indicates a paradox: stars are silent, music is not. Whatever Pythagoras was indicating, it was a form of the paradox, which played a fundamental role in ancient Greek philosophy.<sup>11</sup> Pythagoras and Plato stand out as the philosophers in whose thought this musical paradox is reflected on a *cosmic* scale. According to Plato, a loving creator of the world made a moving image of eternity in the heavens by the circuits of the stars, which were constructed on the proportions of a musical scale (Plato *Timaeus* 35-37).<sup>12</sup> In Platonic philosophy, the human soul could aspire to this sacred order through reason and music (Plato *Timaeus* 47c).<sup>13</sup> This musical order I call ‘cosmic music’, distinct from ‘the harmony of the spheres’, which is the sound made by the crystalline spheres on which the sun, moon, planets and fixed stars rotate,

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Pythagorean musical theory provides an explanation of the universe, down to the level of quantum physics. Since O’Halloran makes it all clear, I don’t think his book is about a paradox in a contemporary sense.

<sup>10</sup> I have found very few publications addressing in an academic fashion the question of how to express the idea of cosmic music in actual sound. Some forms were explored by Johann Hasler in his PhD thesis, which aims to be a manual for composers (Hasler 2011); the connection between the zodiac and the circle of fifths based on Gower and Chaucer has been explored by jazz pianist Michael Bank (Bank 2015). For a more general survey, see Peter Hamel (1978) *Through Music to the Self*.

<sup>11</sup> See also Verelst and Coecke (1999), who have argued that *the* fundamental enigma of ancient philosophy, that of being and non-being, has re-emerged in the contemporary paradox of quantum non-locality.

<sup>12</sup> ‘God created the soul before the body and gave it precedence both in time and value, and made it the dominating and controlling partner. (...) And when the whole structure of the soul had been finished to the liking of its framer, he proceeded to fashion the whole corporeal world within it, fitting the two together centre to centre: and the soul was woven right through from the centre to the outermost heaven, which it enveloped from the outside and, revolving on itself, provided a divine source of unending and rational life for all time. The body of the heaven is visible, but the soul invisible and endowed with reason and harmony, being the best creation of the best of intelligible and eternal things’ (Plato *Timaeus* 36-37; 1965, 47-50).

<sup>13</sup> Plato writes that sight has been given to humankind in order to ‘see the revolutions of intelligence in the heavens and use their untroubled course to guide the troubled revolutions in our own understanding’ (*Tim.* 47b). On music, he writes: ‘the same applies to sound and hearing, which were given by the gods for the same end and purpose. Speech was directed to just this end to which it makes an outstanding contribution; and all audible musical sound is given us for the sake of harmony, which has motions akin to the orbits in our souls, and which, as anyone who makes intelligent use of the arts knows, is not to be used, as is commonly thought, to give irrational pleasure, but as a heaven-sent ally in reducing to order and harmony any disharmony in the revolutions within us’ (*Timaeus* 47c; Plato 1965, 65). See also below, chapter 3.

or so the ancients believed.<sup>14</sup> Cosmic music is a concept related to a teleological cosmology, the theory that creation has a purpose or goal; cosmic music refers to a harmonious order of creation, recognized in all sorts of regular patterns of natural movement, not only by the movements of the heavenly bodies, but also the movements of the four elements, the cyclical succession of the seasons, by harmonious motions in music and by the revolutions in the human soul.<sup>15</sup> In Plato's *Timaeus*, the eternal source of this cosmic music is transcendent, beyond the senses (Plato *Timaeus* 28). To the Pythagoreans, this transcendental cosmic order was present in all music, and thus, they argued, music must be present in the whole cosmos, and the stars must make music (Aristotle *Metaphysics* I.5). My proposition is to regard this understanding of reality as a paradox that points to a non-ordinary mode of consciousness. Therefore, the title of this thesis is not taken from the established philosophical concepts of 'cosmic music' or 'harmony of the spheres', but uses 'star music' to refer to the paradox.<sup>16</sup>

### Silent music

'Star music' expresses a contradiction, the fact that music can't be seen and stars are silent. Silence, however, is not just the absence of sound; it may indicate the unsaid, the unsayable, or even a presence, as in Japanese culture (Losseff 2007, 1).<sup>17</sup> In fact, as long as we live there is no such thing as silence; even when you block your ears, you'll still hear your heartbeat. The human body does not emit light, but it does make sound. Therefore, silence is a mental construct, contradicting the reality of sensory perception, as composer John Cage found out when he visited a soundproof chamber (Larson 2012, 270-271). He

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<sup>14</sup> This division is a simplification intended for clarity. In my experience, the content of what scholars indicate with 'harmony of the spheres' or 'cosmic music' is not uniform at all.

<sup>15</sup> Although the source of this theory is Plato, its clearest statement in ancient philosophy is found in the writings of the Neoplatonic philosopher Boethius (see Boethius *De institutione musica* I.2; 1989, 9-10). On Boethius' ideas, see chapter 4.

<sup>16</sup> A review of the academic literature on cosmic music is presented below in Appendix 1.

<sup>17</sup> In the collection of essays that Nicky Losseff and Jenny Doctor have edited, *Silence, Music, Silent Music*, Losseff calls musical silence 'pregnant with unanswerable questions' (Losseff 2007, 2). Naomi Waltham-Smith has commented on the publication that 'it wants to speak about the unspoken and yet only serves to render it all the more ineffable' (Waltham-Smith 2009, 320).



realized there was no such thing as silence, no split between spirit and matter; silence is a change of mind, a turning around (ibid.). Music philosopher Jan Christiaens argues:

If silence were to be understood as total absence of sound, there would be no possibility whatever to evocate silence in music. But silence is not just absence of sound, or emptiness. Besides this evident physico-acoustic definition, silence can also mean a certain quality in the mind of the listener, brought about by a specific acoustic atmosphere in the music. As such, silence stands for a definite kind of presence rather than absence (Jan Christiaens in Losseff 2007, 57).

This approach to silence suggests a relevance of the paradox of ‘star music’ for contemporary concepts like mindfulness, meditation, stillness, and self-awakening. Perhaps Pythagoras intended to express that there is stillness in music, and music in stillness, as a source of the sacred.<sup>18</sup>

### *Reflexivity*

The research method I employ to generate insight into ancient cosmology and philosophy is a re-reading of the ancient theories to make new sense, as it is proposed by professor Jeffrey Kripal in his book *Comparing Religions: Coming to Terms* (2014). Kripal distinguishes three ways of re-reading: 1. to believe the information on the authority of tradition (‘faithful re-reading’); 2. to doubt any information that is unverifiable by empirical, objective means (‘rational re-reading’); and 3. to reflect on the information to see if there might be a different, third angle beyond ‘true or not’ (‘reflexive re-reading’). Reflexive re-reading neither excludes nor includes faith or reason, but looks beyond for a third position, by ‘stepping outside’, a new angle that transcends the antagonisms (Kripal 2014, 85, 367-368). To Kripal, reflexive re-reading is ‘the school of the more’, looking at the looker, which ultimately is the observing consciousness (Kripal 2014, 368). Kripal gives consciousness itself the central place: ‘consciousness is not only the ground of all comparative grounds, it is also the ground of all science, all rationalism, all reductionism, all religious experience, indeed all human knowledge and experience’ (ibid., 390). In the

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<sup>18</sup> Steve Taylor cites the philosopher Robert Forman, writing about the effect of his experience of awakening: ‘my experience, indeed my life, became noticeably different than it had been before that date: behind everything I am and do now came to be a sense of silence, a bottomless emptiness, so open as to be without end. The silence bears a sense of spaciousness, or vastness, which extends in every direction .... Vast silence has been the me that watches and lives and holds it all. I am, strange to say, infinite’ (Robert Forman *Enlightenment Ain’t What It’s Cracked Up to Be*; Ropley UK: O-Books, 2011; 12. Cited in Taylor 2017, 176). This topic is explored in more detail in chapter 9.

*finale* to his book he explains what 'looking into the looker' entails: 'we might imagine a future form of consciousness becoming aware not of just more culture and more and more cognition, but of consciousness itself (ibid., 392). To me that is a paradox of the highest order. Kripal's method aims at the *transpersonal* aspects of consciousness; the form of reflexivity he calls for is a reflection on the nature of consciousness, not on its subjective, personal contents ('culture and cognition'). Of course, my own musicianship is a necessary precondition to research the ontological dimension of music, but I found it difficult to differentiate between my own personal and transpersonal musical experiences, and even harder to put my intuitions to words. In fact, words often get in the way; I lose contact with musical reality when academic discourse kicks in.<sup>19</sup> I have never heard some sort of 'cosmic music' myself, and so there is little autobiographical reflexivity in this thesis. Although playing music always generates a sense of wholeness for me, the musical projects I realised while carrying out this research did not significantly contribute to an understanding of the nature of musical consciousness, and therefore I have relegated them to appendix 2.

### *Consciousness*

If reflexive re-reading is 'consciousness becoming aware of consciousness', we need to ask what consciousness is. It seems the most obvious thing in the world, yet it is almost impossible to qualify or localise. Allan Combs, director of the Center for Consciousness Studies of The California Institute of Integral Studies, puts it very clearly when he writes that 'the big problem of consciousness' is that it is 'impossible to define' (Combs 2016, 1). The ancients did not have a word meaning 'consciousness'. In the sense that it is used today, the word 'consciousness' was invented in the seventeenth century by René Descartes and John Locke (Combs 2016, 1). At first, consciousness was conceived as anchored to the centre of the human brain, but over the course of time more and more thinkers were inclined to see consciousness as a fundamental aspect of the entire universe, beyond the limits of the personal. Kripal has recently ardently recommended the works of the contemporary idealist philosopher Bernardo Kastrup, because his philosophical precision and contemporary relevance resonates with the comparative

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<sup>19</sup> As David Clarke writes: 'music traces the flowing and knowing of our being more deeply than language' (Clarke 2011, 24).

mystical literature on which Kripal's method is based (Kripal, preface to Kastrup 2016, 3). Kastrup's idealist worldview is based on the notion 'that what we call the 'human psyche' or 'personal awareness' is not a self-contained phenomenon inside our head, but a dissociated psychic complex – or *alter* – of a broader transpersonal consciousness. All reality unfolds as subjective experiences in this transpersonal 'mind-at-large' or God (Kastrup 2015, 205; Kastrup 2016, 211). This theory he calls 'monistic idealism': 'everything is mind'.<sup>20</sup> This definition of consciousness, ranging from the personal to the ubiquitous, resonates well with Pythagorean and Platonic philosophy, which posited the source of human mind, soul, or spirit in an all-pervading divine order. It provides a workable frame for a reflexive re-reading of ancient ideas on cosmic music as pointing to a non-ordinary state of consciousness, in which the entire world is experienced as some form of music.<sup>21</sup> However, in defiance of monism I propose to see the antithesis of matter and mind as a *paradox*. That is of course a very challenging concept for research or for a practice of music, with such a wide range that it cannot be dealt with in a few pages. I have borrowed theories of philosophy, cosmology, musicology, psychology, theology, mysticism and esotericism, without pretending to add new insights to any of these fields; I use these disciplines to enhance my understanding of my own musical awareness. For me personally, this thesis is thus no more (and no less) than a preparation for a practice of music, by exploring its reflection in the world of thought. May it inspire!

### Musicking

The Pythagoreans declared that the elements of all things were whole numbers; not as

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<sup>20</sup> On contemporary monism, see M. Silberstein & A. Chemero (2015) 'Extending neutral monism to the hard problem'. Jonathan Schaffer distinguishes in 'Monism: The Priority of the Whole' (2010) three main threads of the monistic tradition in the history of philosophy: 'the priority of the whole to the parts', found for instance in Proclus; 'the organic unity of the whole', based on Plato's *Timaeus*; and 'the world as an integrated system', starting from Spinoza.

<sup>21</sup> Since I do not consider the theory of the brain as the source of consciousness, I make no mention of a neurological approach to music. In this fascinating field of research, the most appealing study I came across was Ian McGilchrist's book *The Master and his Emissary* (New Haven CT: Yale University Press, 2009).

in the laws of modern physics, but as gods, proceeding from a supreme One or Unity (Aristotle *Met.* I.5).<sup>22</sup> It is very difficult for us to imagine the ancient view of reality. The contemporary English philosopher Jeremy Naydler has argued that the ancient Greeks had a type of unitary consciousness, intermingling continually with a transpersonal dimension, which in the ancient world meant: with the gods (Naydler 2009, 189). I suggest that this ancient state of consciousness was related to a musical experience of the world. Christopher Small (1927–2011), musician and musicologist, has coined the term ‘musicking’, indicating that music is a process (verb) and not an object (noun) (Small 1998). Small defines ‘musicking’ as ‘to take part, in any capacity, in a musical performance, whether by performing, by listening, by rehearsing or practising, by providing material for performance (what is called composing), or by dancing’ (Small 1998, 9). In the ancient world music embraced dance, poetry, the inspiration of the Muses, harmony of the individual, society, nature and the cosmos, and much more.<sup>23</sup> Small thinks that a musical performance engages the participants in a process of ‘exploring, affirming and celebrating the nature of the pattern’ which connects humans with each other, and humans with the world, which could include feeling in touch with the music of the spheres (ibid., 142).<sup>24</sup> In this way, the concept of ‘musicking’ is helpful for a reflexive re-reading of cosmic music as a *shared* experience.

### Relevance

To establish the relevance of the idea of cosmic music to a contemporary experience of music, I have relied on the German idealist philosopher Hans-Georg Gadamer (1900–2002), who published in 1977 an essay titled *Die Aktualität des Schönen*, translated as *The Relevance of the Beautiful* (Gadamer 1986). Gadamer’s essay has been welcomed as an introduction for the non-specialist to contemporary idealist philosophy of aesthetics and hermeneutics of art (Stern-Gillet 1988, 289). In his essay Gadamer aims to vindicate

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<sup>22</sup> On the Pythagoreans, see Kenneth Guthrie (1987) *The Pythagorean Sourcebook and Library* and Charles Kahn (2001) *Pythagoras and the Pythagoreans*.

<sup>23</sup> Unfortunately, antiquity has not left behind any notated music that can be considered to be an expression of cosmic music. Martin West has presented 51 musical documents of Greek music from the classical to the Roman period, which number contained just a handful of complete melodies that were longer than a few bars in transcription (West 1992, 277–326). None has the heavenly harmony as subject.

<sup>24</sup> ‘It is no wonder that so many have spoken of musicking as a kind of communication with the Infinite, or that they should feel in touch with the Music of the Spheres or with the Ancestors’ (Small 1998, 142).

the Platonic claim that beauty is that which makes true reality visible, manifested in three ways: play, symbol, and festival (*Spiel, Symbol und Fest*) (Gadamer 1986; Stern-Gillet 1988, 290). Play to Gadamer signifies 'non-purposive rationality', 'something intended as something', with the participation of artist *and* audience. The symbolic nature of art 'does not simply point toward a meaning, but rather allows that meaning to present itself. (...) What is represented is itself present in the only way available to it' (Gadamer 1986, 34-35). This additional something present in the work of art is produced by *mimesis* (representation of nature), which to Gadamer 'in its original Greek sense is derived from the star-dance of the heavens. The stars represent the pure mathematical regularities and proportions that constitute the heavenly order' (ibid., 36). The symbol preserves its meaning within itself. As an example, Gadamer cites the absolute music of the Viennese school. With the notion of 'festival' he seeks to position art as a communal participation or celebration, uniting people in a unique way, addressing the inner ear.

To Gadamer, the essence of our temporal experience of art is in learning how to dwell upon the work in a specific way, which 'perhaps is the only way that is granted to us finite beings to relate to what we call eternity' (ibid., 45). He explicitly includes modern popular music, that has the 'capacity to establish communication in a way that reaches people of every class and educational background' (ibid., 51).<sup>25</sup> In his conclusion, Gadamer calls for 'genuine art' that can 'transform our fleeting experience into the stable and lasting form of an independent and internally coherent creation' (ibid., 53). I think Gadamer's interpretation of the Platonic concept of relevance (in the sense of *Aktualität*) of beauty, which has an aesthetic and a psychological aspect, to music is exactly what I need for this research.<sup>26</sup> I would like to summarize the core of Gadamer's re-reading of Plato as: positioning the shared transcendent meaning of music as present *in the moment of performance*. Star music is a *living* paradox.

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<sup>25</sup> Gadamer illustrates the autonomous temporality of the work of art by our experience of rhythm, which we can only elicit if we are actively involved. 'The ideal creation only arises insofar as we ourselves actively transcend all contingent aspects' (Gadamer 1986, 44).

<sup>26</sup> For an analysis of the difference between the Greek and English meanings of the word 'beauty', see Pappas, Nickolas, "Plato's Aesthetics", *The Stanford Encyclopedia of Philosophy* (Fall 2016 Edition), Edward N. Zalta (ed.), <https://plato.stanford.edu/archives/fall2016/entries/plato-aesthetics/>.

## Unfolding

In this thesis, I argue that a seemingly naïve metaphor of singing stars can point to a non-ordinary state of consciousness, from the roots of cosmic music in Pythagorean philosophy to an intuition of a new spiritual direction in contemporary New Age music. In the first chapter, 'The Pythagorean roots', the idea of cosmic music is positioned in its historical context. The idea is neither accepted nor rejected, but reflected upon as the expression of a non-ordinary state of consciousness, supposedly experienced by Pythagoras himself. Pythagoras did not write his ideas down, but they spread through his followers and were taken up by Plato, who integrated them into his cosmology. The success of Platonic philosophy overshadowed the independent Pythagorean tradition.<sup>27</sup> The history of the idea of cosmic music is thus intertwined with Platonism, although not identical. In the second chapter, 'Plato's musical cosmology', the *Timaeus* dialogue is closely followed to show how Plato granted the proportions of the Pythagorean scale to his concept of the soul of the world, a living creature, containing all creation. To Plato, the road to salvation consists of 'learning about the harmonious circuits of the universe' (*Timaeus* 90). It is this concept of cosmic music that dominated various schools of philosophy of the ancient world, which is surveyed in the third chapter, 'The musical cosmos of antiquity'. Over time, the idea changed from a philosophical theory into a religious, eschatological idea; hearing cosmic music was increasingly conceived as something to be experienced at or beyond the threshold of death. The paradox of 'star music' became, so to speak, disembodied; it was this eschatological form of the idea of cosmic music that the Middle Ages of Western Europe inherited from Antiquity, as argued in the fifth chapter, 'Medieval heavenly harmony'.

From the eleventh century musical notation spread, facilitating the rise of polyphony, and perhaps the most important development in Western music to this day. It also facilitated musical self-reflection. This led to all sorts of debates on which kind of musical structure (monody versus polyphony), tuning (Pythagorean tuning versus equal temperament), or performance (vocal versus instrumental music) would best express the ancient theories of cosmic music. Because I propose to see 'star music' as a paradox, it follows that the form of music that aims at transforming consciousness is flexible, and that 'star music' is

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<sup>27</sup> On the complicated question of the relation between Pythagoreanism and Platonism, see Charles Kahn (2001) *Pythagoras and the Pythagoreans. A Brief History*.

not dependent on form but has somehow to point beyond itself. For that reason, this thesis does not present a history of music or goes into much detail of compositions, tunings or practices. Instead, I have singled out two outstanding forms of the idea of cosmic music to unfold my argument, 'The *musica mundana* of the Italian Renaissance' (chapter six) and 'The absolute music of the Romantic era' (chapter seven). In brief, the Renaissance was looking back to the golden age of ancient philosophy (hence the Latin phrase in the chapter title), but the Romantics were claiming that music was an independent gateway to the eternal, superior to thought. As *l'art pour l'art*, it reversed the paradox to: music making the stars. At the beginning of the twentieth century, medieval polyphony had developed into complex symphonic music, a 'great cathedral' in sound to which 'little, if anything, could be added', in the words of Harry Partch (Strunk 1998, 1447). Cosmic music had moved into the concert hall and employed a symphony orchestra to express its mystical idea – or was the idea lost in the process?

The next two chapters aim to show a shift in thought and music, which I connect to the arising of a new relevance of the paradox of 'star music'. In chapter eight, 'The rediscovery of the world soul', I introduce examples of transpersonal psychology ('cosmic consciousness') and physics ('quantum theory') as theories that pointed to a universe that is – paradoxically - alive and sentient, strongly reminiscent of the characteristics of the Pythagorean-Platonic cosmology. In classical music, composers tried anything to find new ways of relevance, different from Romanticism. The impulse for change, however, shifted to popular music, which increasingly turned away from notation and harmonic complexity. In chapter nine, 'Pythagoras for the New Age', I argue that we may now be witnessing the development of New Age music, which aims at bringing about non-ordinary states of consciousness, connected with a 'collective awakening', as Steve Taylor calls it (Taylor 2017, 261). In that sense, the circle is round; the extraordinary experience that Pythagoras may have had could become the focus of a new, spiritual practice of music. In the Conclusion, chapter ten, I outline the impact of the paradox of 'star music' on my personal journey as a researcher and a musician.

Now, let's turn to the first thinker in the West to come up with this idea of a musical cosmos, or cosmic music, or both at once, or something beyond both: Pythagoras.

## 2. The Pythagorean roots

Let reason, the gift divine, be thy highest guide;  
 Then should you be separated from the body, and soar in the æther,  
 You will be imperishable, a divinity, a mortal no more.  
 (*The Golden Verses of Pythagoras* 69-71; Guthrie 1987, 164-165)

Pythagoras (c. 570-495 BCE) and his followers were the first in the Western world to conceive of music as connected with the heavens, according to Aristotle (384-322 BCE). The Pythagoreans, Aristotle writes, 'saw that the modifications and the ratios of the musical scales were expressible in numbers; since, then, all other things seemed in their whole nature to be modelled on numbers, and numbers seemed to be the first things in the whole of nature, they supposed the elements of numbers to be the elements of all things, and the whole heaven to be a musical scale and a number' (Aristotle *Metaphysics* I.5; 1984, Vol. II, 1559). This is the first mention in history of the so-called 'harmony of the spheres', the Pythagorean concept of the harmonious sounds made by the spheres of the planets, sun and fixed stars, rotating around the earth. This 'harmony of the spheres' was said to be unnoticeable, because it is in our ears from the very moment of birth; only the semi-divine Pythagoras could hear it (Aristotle *De Caelo* 290b, Barker 1989, 33).<sup>28</sup>

Using the comparative method of Jeffrey Kripal, as proposed in his recent book *Comparing Religions* (2014), the question of how we can re-read the statement that Pythagoras was able to hear this cosmic music can be answered in three ways. The statement is

1. to be believed on the authority of tradition ('faithful re-reading')
2. to be doubted, because unverifiable by empirical, objective means ('rational re-reading')
3. to be reflected upon to see if there might be a different, third angle beyond true or not ('reflexive re-reading').

Reflexive re-reading is not a new method, as can be seen in the commentary by the medieval Sufi philosopher Qutb al-Din al-Shirazi (1236-1311 CE):

Pythagoras related that his soul rose as far as the higher world. Due to the purity of his being and to the divinatory power of his heart, he heard the melodies of the

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<sup>28</sup> See also Porphyry *Life of Pythagoras* 30 (Guthrie 1987, 129); Iamblichus *Life of Pythagoras* 15 (Guthrie 1987, 72).



Spheres and the sonorities produced by the movements of the heavenly bodies; at the same time he became aware of the discreet resonance of the voices of their angels. Afterwards he returned to his material body. As a result of what he had heard he determined the musical relationships and perfected the science of music (Qutb al-Din al-Shirazi, in Godwin 1986, 87).

The Sufi re-reading of Pythagoras' hearing of cosmic music, as an experience of a spiritual reality while out-of-the-body, may very well have been suggested by the final lines of the *Golden Verses*, quoted at the head of this chapter. The verses were written many hundreds of years after Pythagoras lived, and seem to reflect a Neoplatonic interpretation, which elevated Pythagoras to the rank of an immortal sage.<sup>29</sup> A prominent authority on Pythagoras, Walter Burkert (1931-2015), has argued that Pythagoras was not much of a scientist or philosopher, but rather a religious leader. He writes:

If Pythagoras was something of a shaman, who in ecstasy made contact with worlds "beyond," then the tradition that he personally heard the heavenly music surely preserves something of truth. When we look beyond the façade of analysis and explication of the harmony of the spheres, what we find is neither empirical nor mathematical science, but eschatology (Burkert 1972, 357).<sup>30</sup>

Both Qutb al-Din al-Shirazi and Walter Burkert, for very different reasons, are prepared to re-read the statement that Pythagoras heard cosmic music as an indication of a mystical experience. Their statements have implicit consequences for a theory of musical consciousness, which is the focus of what Kripal calls reflexive re-reading. This thesis will apply Kripal's method to the ancient concept of cosmic music, asking what it could mean for the nature of consciousness as a *musical* experience. Throughout this thesis, I will come back to the question of the nature of Pythagoras' experience.

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<sup>29</sup> For the text, see Guthrie 1987, 163-165 and for the context Kahn 2001, 94 ff.

<sup>30</sup> Burkert is using the term 'shaman' in the broad sense of anybody dealing with altered states of consciousness, connecting it with the religion of North-Asia, as proposed by Mircea Eliade in his seminal work *Shamanism. Archaic Techniques of Ecstasy*, originally published in 1951. To Eliade, the outstanding characteristic of shamanism is the 'journey to the netherworld', which is not apparent in Pythagoreanism. Recently Peter Kingsley has pointed to the Babylonian *Magi* as a more likely connection between Empedocles and the traditions of North-Asiatic shamanism (Kingsley 1995, 226). That may very well also have been the case with Pythagoras. Geoffrey Lloyd writes that reaching for a label such as shaman does not help in characterizing Pythagoras (Huffman 2014, 43). Choosing between shaman, magus and mystic, I prefer the latter, because the concept has a Greek origin.

### Pythagorean philosophy

In order to discuss the question of Pythagoras' supposed experience, it is necessary to put it into the broader context of Pythagorean philosophy. Here I encounter a formidable obstacle. When considering Pythagoras and early Pythagoreanism, it is impossible to distinguish fact from fiction due to the lack of reliable sources (Kahn 2001, 5). As the academic debate continues, I have chosen to build my picture of Pythagoras on the *communis opinio*, which says that Pythagoras was a learned man who introduced some very unusual ideas in relation to the soul and number.<sup>31</sup> Perhaps these ideas were not entirely his own, but he managed to convey them to a community of followers, who began to live according to them, the *bios pythagorikos*.<sup>32</sup>

Pythagoras was born on the island of Samos and travelled through the ancient world, probably to Egypt and possibly to Mesopotamia, learning mathematics, music, astronomy, medicine and divination (Kirk 1983, 223). Around the age of forty he migrated, probably for political reasons, to the Greek colonies in Southern Italy and settled in Croton. There he attracted a group of followers, who lived according to his teachings as a community. Pythagoras is generally credited with the invention of the word 'philosophy' (Kahn 2001, 68), converting religious life into a pursuit of wisdom (Cornford 1991, 200). He was the first to introduce into Greece the theory of transmigration of souls into human or even animal bodies and the eternal recurrence of events (Kahn 2001, 11). He was also the first Greek philosopher to include women among his disciples, promoting a single standard of sexual conduct for women and men.<sup>33</sup> The Pythagoreans practised mathematics, geometry, philosophy, music, meditation and gymnastics; they were vegetarians. The Pythagoreans were most of all a religious community; their whole life was oriented towards following the gods by correctly interpreting and accepting their will (M. Laura Gemelli Marciano in Huffman 2014, 136). Pythagoreans formed a governing

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<sup>31</sup> In this, I follow Charles Kahn (2001), Carl Huffman (2014) and Geoffrey Lloyd (in Huffman 2014, 24-45).

<sup>32</sup> See Leonid Zhmud in Huffman 2014, 89.

<sup>33</sup> To my surprise, Burkert does not pay any attention to this remarkable position. Plato followed Pythagoras in the inclusion of women (*Laws* 805). Joscelyn Godwin points out that 'much evil would have been avoided had Western civilization not indulged in (...) the restriction of public office and education to men alone' (in Guthrie 1987, 12). Perhaps there is a connection with the playing of musical instruments, which is independent of gender.

elite at various times in several South-Italian Greek city-states. They were not always popular; a violent revolt against them in Croton around 510 BCE ended the first era of the Pythagorean movement (Barker 1989, 28). It seems that the *bios pythagorikos* still existed in Plato's days (5<sup>th</sup>-4<sup>rd</sup> century BCE), but the individuals who considered themselves Pythagoreans in these centuries did not have much in common (Leonid Zhmud in Huffman 2014, 89; 110). In the first two centuries CE, there was a revival of the movement, known as Neo-Pythagoreanism, which significantly influenced the cosmology of the ancient world with elements of Pythagorean and Platonic ideas.<sup>34</sup>

What should I consider to be Pythagorean philosophy? Although Pythagoras was generally believed in antiquity to be the inventor of the term 'philosophy', meaning 'love of wisdom', his teachings do not comprise a consistent body of rational explanations but appear as aphorisms with a religious base (Kirk 1983, 213). He is usually included amongst the Presocratic philosophers, but not without considerable reservations (Kirk 1957, 238). Any reconstruction of Pythagoras' teachings must be largely conjectural, because Pythagoras himself did not write anything and most of his followers attributed anything of importance to the 'master'. His teachings were transmitted orally ('*acousmata*', things heard), to be committed to memory, containing a catechism of doctrine and practice and possibly even passwords for a journey in the afterlife (Kirk 1983, 229). In time, Pythagoreans ascribed theories to Pythagoras which were probably never his and at the same time, the school of Pythagoras absorbed many external ideas. In the Hellenistic era, it became fashionable to create pseudonymous Pythagorean works, thus adding to the prestige of Pythagoras and his immediate followers (Kahn 2001, 74).<sup>35</sup> Kenneth Guthrie's *The Pythagorean Sourcebook and Library* relies for more than two-thirds of its contents on authors of late antiquity, instead of the early years. For Burkert the result is an intangible jungle of written fragments, from which:

the historian of science rediscovers Pythagoras the scientist; the religiously minded show us Pythagoras the mystic; he who believes in a synthesis above rational analysis tries to show that in Pythagoras the *coincidentia oppositorum* is

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<sup>34</sup> On Neo-Pythagoreanism, see also chapter 4.

<sup>35</sup> Bruno Centrone has argued that the substantial homogeneity of the treatises, particularly the tendency to present Pythagorean philosophy as a single coherent system, may point to the Alexandrian milieu of the first century BC (Huffman 2014, 340).

comprehended in a Basic Idea; the anthropologist finds 'shamanism' (Burkert 1972, 9).

Indeed, we shall never know exactly what Pythagoras himself taught. But that does not diminish the historical importance of the early Pythagorean movement and its theories (James 1993, 22).

Francis Cornford lists the pivotal Pythagorean concepts, which he says all scholars consider to be characteristic, as: the ideal of 'becoming like God' and the notion of *mimesis* ('imitation of nature'); the correspondence of macrocosm and microcosm; the concept of *harmony*; the doctrine of numbers; the symbol known as the *tetractys* (Cornford 1922, 142). Charles Kahn names as the two fundamental principles of Pythagorean thought: 1. the music of the spheres, connecting music, mathematics and celestial phenomena; and 2. the conception of the soul as immortal and potentially divine, connected to the concept of transmigration (Kahn 2001, 4-5; 50). The introduction of reincarnation was a radical break with the traditional Greek view of the afterlife. Transmigration implies that the nature of the soul is immortal and non-material.<sup>36</sup> The concept of transmigration of the soul is also found in Orphic poetry.<sup>37</sup> The theory of transmigration became a school doctrine for the Platonic tradition, remained popular throughout antiquity both in literature and philosophy, and disappeared with the triumph of Christianity (Kahn 2001, 148). Connected to the theory of transmigration was a vegetarian diet, aimed at avoiding interference with reincarnation, or based on sympathy with animals, and promoting purity of the body. It exercised great popular appeal in antiquity and became a characteristic of the Pythagorean way of life.

The first known Pythagorean book is a work by Philolaus of Croton from the last half of the 5<sup>th</sup> century BCE, titled *On Nature* (*Peri Phuseos*). The book is lost, but multiple

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<sup>36</sup> Pythagoras may have borrowed the theory from the Hindu philosophy of pre-Buddhist times, possibly by way of the Persian Empire (Kahn 2001, 19). In the sacred texts of the Hindu religion, the belief is expressed that human souls can be reincarnated in animals and animal souls in humans (Clarke 2003, 20). On the other hand, there is a thrilling possibility that Greek philosophy somehow influenced early Chinese thought of the third century BCE, in which the movements of the cosmos or nature literally produced music (Brindley 2006, 14). I prefer to take a perennialistic point of view, 'some form of underlying landscape of experience that precedes interpretation by spiritual traditions' (Taylor 2017, 215).

<sup>37</sup> I will return to the connection between Orphism and Pythagoreanism below.

quotations reveal some of its contents (Guthrie 1987, 168-175). Charles Kahn has convincingly argued that Philolaus' cosmology can be considered as based on Pythagoras' own ideas (Kahn 2001, 23-38). According to Philolaus, nature in the world-order as a whole and as the sum of all things was a 'fitting together' of two fundamental principles, 'unlimited' and 'limiting'. The bond was named *harmonia*, after the numerical concordance of the musical scale, in contemporary thought explained as a 'harmonically differentiated image of Unity' (Kahn 2011, 24-25; Fideler 1997, 145). According to Philolaus, the cosmos and the heavens arises from the 'One' by breathing in, like a new born animal; 'One' is prior to numbers proper, which divide into even (unlimited) and odd (limiting), and the 'One' itself as both even and odd (Kahn 2001, 28-29).

The other early Pythagorean philosopher of importance was Archytas of Tarentum (428–347 BCE), a personal friend of Plato and one of the greatest mathematical scientists of his day (Kahn 2011, 40). Again, his works are lost, and quotations do not shed much light on his philosophy. In music theory or harmonics, however, Archytas set the standard for the later 'mathematical' tradition of musical science, for instance by proving that the musical tone of a  $9/8$  ratio cannot be divided in half.<sup>38</sup> The picture that at first sight arises from the early Pythagorean philosophy is a peculiar mix of symbolic cosmogony and complex mathematics.

Burkert, like many other scholars, has distinguished two sides to Pythagorean thought, one mystical and religious, the other scientific and mathematical. In German, Burkert calls them *Weisheit und Wissenschaft*, poorly translated in English as *Lore and Science* (Burkert 1962/1972). To Burkert, Pythagoras is

the sage who acquires his knowledge by his relation to the gods, in contrast with the scientist, exemplified by Plato, who bases his knowledge on deductive proof; the sage who works immediately, in his own person, whereas the scientist writes books; the sage who knows the roads through Heaven and Underworld, whereas the scientist measures cosmic distances in *stades*; the sage who interprets the signs of the zodiac, whereas the scientist calculates the movements of the heavenly bodies in advance (Burkert 1972, 481).

Here we have a caricatured picture of Pythagoras as a materialist scientist and an idealist sage, in opposition to each other. However, no such distinction would be made by the

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<sup>38</sup> See below, page 28, on the mathematics of the intervals.

Pythagoreans or the Platonists themselves (Dodds 1951, 167 n. 68). In early Pythagorean thought there was no distinction between abstract mathematics and the material world of nature (Kahn 2001, 55). The point that is lost on Burkert is the central theory that Pythagoras proposes, namely that number is the natural order of both the material *and* the spiritual dimensions of reality. The symbol for this idea is cosmic music, which is rooted in both the material and the mental dimension, and is ruled by number, ranging from the microcosm of the vibrating string to the macrocosmic spectacle of cosmic music. And yet, Burkert admits that Pythagoras' theories appeal to 'the feeling that there is a kind of knowing which penetrates to the very core of the universe, which offers truth as something at once beatific and comforting, and presents the human being as cradled in a universal harmony' (Burkert 1972, 482). Already in 1912 Francis Cornford convincingly argued that in Pythagoras' time there was no break between traditional belief and rational inquiry, but that philosophy had its basis in religion and the supernatural (Cornford 1991, xvii). Reflexive re-reading of Pythagorean philosophy yields a paradoxical unity of faith and reason; any attempt to separate them is, I think, a mistake.

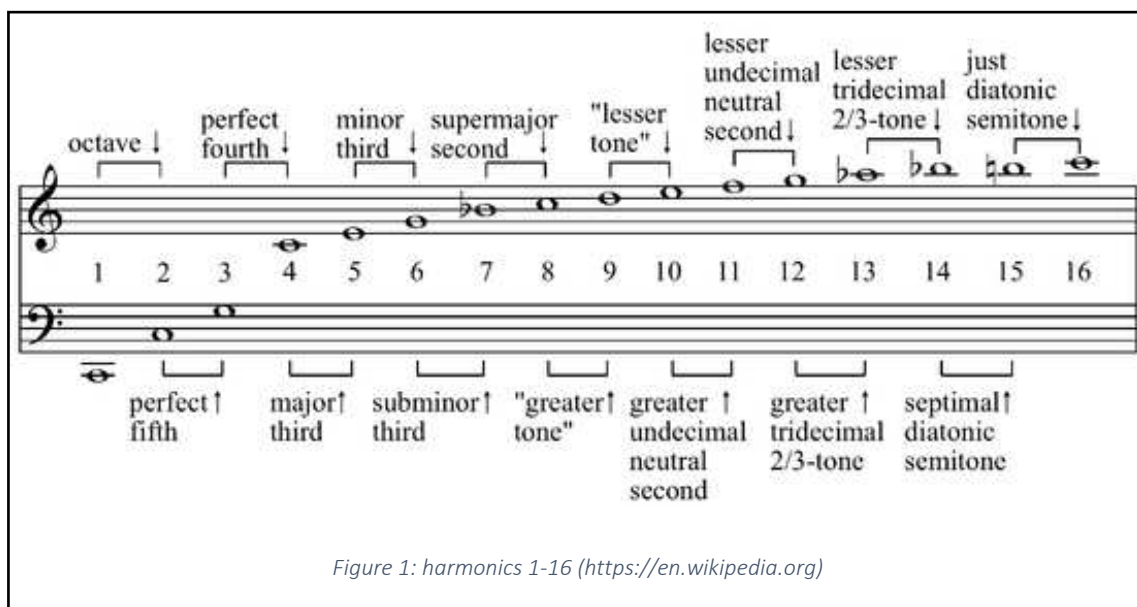
### Harmonics

To gain at least a partial understanding of Pythagorean cosmology, I will explore the mathematics of music in some depth. As a commonplace, all ancient writers on music attribute the discovery of the mathematical ratios of the musical intervals to Pythagoras. The Pythagoreans started a tradition of investigating the mathematical division of the string on a *monochord*, a one-stringed instrument quite unfit for musical performance but useful for research.<sup>39</sup> When the string of the monochord was divided in two by a bridge, a note an octave higher sounded; at two thirds of the length an octave plus fifth sounded; at three quarters a double octave and so forth. The whole and the aliquot parts are called the harmonic series, whole-number multiples of a fundamental frequency, producing the following consonances: 1:1 unison; 2:1 octave; 3:2 fifth; 4:3 fourth; 5:4 major third; 6:5 minor third; 7:6 a different minor third; and so forth. This overtone or

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<sup>39</sup> There is no evidence that Pythagoras himself used a monochord; the oldest source, Archytas, mentions *auloi* and panpipes, not strings (Barker 2007, 26). The ancient Greeks considered the pipe as the instrument with the greatest magical power (West 1992, 33). Andrew Barker has argued that the belief that Pythagoras discovered the ratios of the concords has no foundations; ancient Greek makers of wind instruments already knew them well (Barker in Huffman 2014, 202).

harmonic series is a sounding image of the whole number (integer) series (Crocker 1963, 194). When two notes sound together in a perfect numerical proportion of the lower end of the harmonics series, the combination is pleasing to the ear, it 'stands', and so is called a 'consonance'. When the ratio is not exact, the interference of the frequencies starts increasingly to 'beat', an alteration of soft and loud, which is experienced as 'out of tune', from just slightly swaying to shrill or 'dissonant'. Humans naturally and intuitively recognize the perfect mathematical proportions by ear, especially the first four perfect consonances. The harmonic series can be easily observed in practice when harmonics are played on stringed instrument or blown on wind instruments.<sup>40</sup> The discovery that proportions of whole numbers produce musical consonances was in antiquity ascribed to Pythagoras. To this research, it is not relevant whether Pythagoras actually did so or not; the question is what meaning the phenomenon of harmonics has for the philosophical paradox of star music.



<sup>40</sup> Upper harmonics sounding together will produce a subjective pitch sensation, even if that frequency itself is totally absent (Roederer 1975, 43). Gary Tomlinson writes: 'the sensation of a pitch involves a process in which the lowest of these frequencies (the fundamental) comes into salience. The brain "analyses" the interrelation of higher frequencies (overtones or partials) in creating this percept, a capacity most famously revealed by the "missing fundamental" phenomenon, in which we perceive a fundamental frequency that would give rise to a particular set of overtones even when it is absent' (Tomlinson 2015, 165).

Harmonics present a challenge. As a natural phenomenon, harmonics do not easily fit the cultural conventions of music, the scales and instruments that musicians use.<sup>41</sup> The series of steps depicted in figure 1 exceeds four octaves, while music is practised with scales, a pattern within one octave; the structure of the octave is repeated in the octaves above and below. All the notes of the harmonic series are tied in frequency to the fundamental. When the lower members of the harmonic series depicted in figure 1 are compressed into the steps of a one-octave scale, it can only be used for a tune that has one fundamental, which means music in one scale or key. That was not a major problem to ancient and medieval music, which often employed just one scale or key for a musical composition. A Greek lyre-player setting out to play a melody, had the strings of the instrument already tuned to a pattern of intervals which would make the melody possible (Barker 2007, 7). To change to a tune with another fundamental, the instrument had to be re-tuned. With the growing use of chord progressions in Western music after the Middle Ages, it became necessary to find a tuning system that allowed music to be played in more, and finally in all twelve keys, without any intermittent re-tuning.<sup>42</sup> This led to the system of equal temperament, in global use now, at the expense of the connection to harmonics and pure consonances. In equal temperament, the octave is divided in twelve mathematical equal steps of a semitone. The result is that all intervals except the octave are very slightly out of tune.<sup>43</sup> The mathematical reason for this is the fact that twelve fifths  $(\frac{3}{2})^{12}$  do not yield the same proportion as six octaves  $(2)^6$ .<sup>44</sup> The difference is 531441:524288, roughly a quarter of a semitone, which is known as the *Pythagorean comma*. Equal temperament solves this problem by leaving the octaves in tune and distributing the *comma* over all the other intervals, thereby making them slightly out of

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<sup>41</sup> On harmonics Curt Sachs writes: 'They were a parallel, not a creative, phenomenon' (Sachs 1943, 78). Anthony Storr concludes that music is to be understood as a system of relationships between tones, not related to some feature of the external world, while Leonard Bernstein declares that *all* music 'has a common origin in the universal phenomenon of the harmonic series' (Storr 1992, 60-64).

<sup>42</sup> On tuning, see Daniélou, Alain (1995) *Music and the Power of Sound: The Influence of Tuning and Interval on Consciousness*.

<sup>43</sup> This can be demonstrated by striking any two keys that are not (multiples of) an octave apart on a contemporary keyboard; they will 'beat' instead of 'stand'.

<sup>44</sup> The intervals are multiplied instead of added because of the logarithmic nature of proportion, starting from 1 instead of 0. Thus, a fourth above a fifth is 4:3 times 3:2 gives 12:6 or 2:1, the octave.



tune. This tuning is now so common, globally, that very, very few people are aware of the possibility of other tunings. An important question throughout the history of music was: can the ancient ideas on music be expressed through equal temperament or do we have to retune our modern instruments and let go of modulations? In more general terms: should music express perfect ratios or do we 'play it by ear'? Surprisingly, this question was already debated by the Greeks themselves.<sup>45</sup>

The ancient Greek term 'harmonics' does not easily translate in contemporary musical concepts but can best be described as the theoretical side of tuning the ancient Greek seven-stringed lyre within the range of an octave, on the notes of the next melody to be played.<sup>46</sup> Greek 'harmonic' writing has been classified by Andrew Barker into two fairly distinct traditions, the 'Pythagorean' and the 'Aristoxenian' (Barker 1989, 3). Pythagorean research in harmonics arose out of a conviction that the universe is orderly, that the perfection of a human soul depends on its understanding, and assimilating itself to that order, and that the key to an understanding of its nature lies in number (Barker 1989, 6). The Aristoxenian tradition developed from the practice of professional musicians, who provided music education and supported performances (Barker 2007, 103-104). To Aristoxenus (c. 360-300 BCE), harmonics was the science of music as we hear it (Barker 1989, 4). His approach yielded a musical richness, taking into account all the subtleness of the practice. The Aristoxenians based their concept of scales and tuning on the smallest recognizable interval by ear, which to them was the quarter tone, inevitably subjective and imprecise. They conceived of music as *movement* of the voice or instrument along a line with points marking pitches, unlike static speech (Barker 2007, 141-143). That seems quite scientific in the modern sense.<sup>47</sup>

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<sup>45</sup> The debate was repeated in the Renaissance. Jamie James summarizes the quarrel between Gioseffo Zarlino and Vincenzo Galilei as the argument of 'the natural order of harmony' against 'all scales are man-made' (James 1993, 91).

<sup>46</sup> A scale of an octave would require eight strings. Which was the missing note remains uncertain. Only from the fifth century BCE extra strings were added (Burkert 1972, 391).

<sup>47</sup> Portnoy calls Aristoxenus 'the first of the musical humanists in Western civilization. His philosophy of music made man the sole judge of what is good and bad in music' (Portnoy 1954, 34).

The two traditions opposed each other by writing theoretical treatises. Aristoxenus grew up in Tarentum and was educated by Pythagoreans but later in life he joined the school of Aristotle, who was quite critical of Pythagorean theories (Barker 2007, 114). Aristoxenus tried to persuade his fellow philosophers and scientists in the Lyceum that in his hands the previously trivial discipline of empirical harmonics had developed into one which deserved their intellectual respect (Barker 2007, 229).<sup>48</sup> Aristoxenus became so famous in antiquity that the Romans called him simply 'the musician'. His influence disappeared in the Middle Ages, but it resurfaced in the sixteenth century (Pesic 2014, 18). The arguments of Aristoxenus are relevant to our investigation of the paradoxical. He seems to contrast the faithful Pythagoreans with the rational Aristoxenians, and perhaps also the visionary Plato with the empiricist Aristotle. This is what Aristoxenus says of the Pythagoreans:

We try to give these matters demonstrations which conform to the appearances, not in the manner of our predecessors, some of whom used arguments quite extraneous to the subject, dismissing perception as inaccurate and inventing theoretical explanations, and saying that it is in ratios of numbers and relative speeds that the high and the low come about. Their accounts are altogether extraneous, and totally in conflict with the appearances (Aristoxenus *Elementa Harmonica* II 32 19-29; Barker 1989, 149).

This statement suggests that the Pythagoreans gave precedence to doctrine over evidence from the senses. The problem is, Aristoxenos was writing hundreds of years after Pythagoras, when Pythagorean philosophy had been absorbed by Platonic philosophy. The confusing mix of Pythagorean and Platonic theories has been convincingly pointed out to be the source of a distorted picture of early Pythagorean philosophy by Charles Kahn (2001). It is therefore not possible to indicate the exact nature of the difference between early Pythagorean and Aristoxenian harmonic sciences. In Barker's opinion Ptolemy (c. 90-168 CE) offered a convincing combination of both harmonic traditions, preserving empirical musical richness and spiritual enquiries of far wider scope (Barker 1989, 8). Ptolemy is a towering figure of ancient thought, whose theories on the ordered structure of the heavens, both astronomical and astrological, are influential to this day, but his musical theories were unusual, which I will discuss in

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<sup>48</sup> However, in the hands of his less brilliant followers, empirical harmonics lost virtually all its connections with the realities of musical practice (Barker 2007, 259).

chapter 4. I suggest that the debate on harmonics revealed a fundamental contradiction, a philosophical paradox that could not easily be solved.

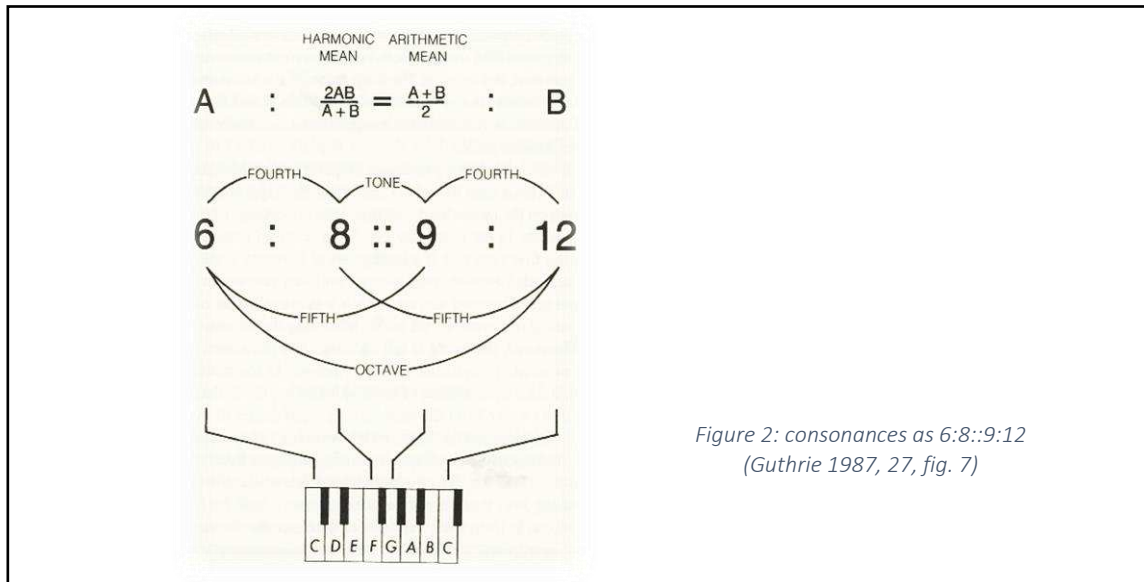


Figure 2: consonances as 6:8::9:12  
(Guthrie 1987, 27, fig. 7)

Pythagorean harmonic science emerges with the works of Philolaus of Croton and Archytas of Tarentum. These writers, who were brilliant mathematicians, were describing the Pythagorean scale as built on superparticular ratios, with a special position for the first four numbers: 1:1 (unison), 1:2 (octave), 2:3 (perfect fifth) and 3:4 (perfect fourth).<sup>49</sup> The symmetry becomes even more beautiful when we start from the proportion of the octave (1:2) as 6:12. By multiplying the basic consonant ratios a series of consonances is formed (see figure 2). Note that this series yields a ratio of 8:9 defining the whole tone (F-G). For the Pythagoreans, this produced the following tuning of the intervals within the octave:

Note	C	D	E	F	G	A	B	C
Interval	Unison	Second	Third	Fourth	Fifth	Sixth	Seventh	Octave
Ratio	1:1	9:8	81:64	4:3	3:2	27:16	243:128	2:1

The most important feature of this tuning is the dominance of the perfect fifth and perfect fourth and consequently the sacrifice of a superparticular third (5:4) and

<sup>49</sup> Superparticular ratios are expressed mathematically as  $\frac{n+1}{n} = 1 + \frac{1}{n}$ ,  $n$  being a positive integer.

corresponding sixth (8:5). In Greek music, however, the Pythagorean scale was used as a *theory of tuning*, not as a practice of melody or composition. In ancient Greek music, the third enjoyed preponderance over larger intervals, as in contemporary music (West 1992, 192). In the early Middle Ages, Pythagorean musical science had completely eclipsed Aristoxenian theory. On the authority of Pythagoras, the pure intervals of octave, fifth and fourth were given a higher musical status than the third, which was avoided in learned compositions. Rigorous application of the Pythagorean scale in tuning from C leads to a dissonant ‘wolf fifth’ C#-G#, an interval so out of tune that it ‘howls’. This restricted playing outside the key of C, a disadvantage which eventually led in the Renaissance to the gradual substitution by equal temperament as tuning system. In order to research the relation of Pythagorean ideas to a practice of music, we should step back and look beyond the opposing views for more. A reflexive re-reading of the question of harmonics enquires what the numerical ratios expressed *in themselves*, according to the Pythagoreans.

### *Pythagorean philosophy of number*

One of the basic Pythagorean doctrines is that ‘everything is number’, not meaning ‘all magnitudes are commensurable’ (Burkert 1972, 463), but ‘all reality is based on metaphysical principles of proportional order’. The ancient Greeks did not use numerals, but the letters of the alphabet to indicate numbers. Thus, quantitative units were not connected to a series of independent symbols, as in the Hindu-Arabic numeral system. The spoken ancient Greek word *alpha* would have indicated the written word *alpha*, its associated meaning as ‘origin, beginning’, the letter A / α, the numeral 1, and one unit. This interconnectedness was no doubt helpful to associate cosmological concepts with numbers. In keeping with the tendency of the Pre-Socratic philosophers, Pythagoras sought to postulate the essential nature of the world and the first principle (*archê*) of all things, and found it in number. The first author who gives a systematic treatment of Pythagorean mathematical thinking is the sceptical Aristotle. He described the early Pythagorean philosophy as considering the elements of number to be the *elements of all things* (Aristotle *Metaphysics* I.5; 1984, Vol. II, 1559; my italics). The view that material reality is based on number seems to accord well with the mathematical logic of contemporary physics, and therefore Pythagoras is often hailed as the first scientist. In antiquity Pythagoras was credited with the invention of mathematics, which Burkert has

proved to be incorrect (Burkert 1972). What he is still famous for, the 'Pythagorean theorem', was actually known in Babylon more than a thousand years before Pythagoras (McClain 1976, 130). Geometric art had flourished in Greece since the eight century BCE. Technological and geometrical thinking was in its heyday in the Greek world at the times of Pythagoras (Burkert 1972, 419). Pythagoras was not a scientist *avant la lettre*.

The innovative character of the Pythagorean philosophy of number did not rest on applied mathematics, but on its cosmic dimension, embracing both the material world and the world of the mind. Numbers were gods, forces, universal and divine principles, the root of all things (Fideler in Guthrie 1987, 20-23). According to Aristotle, in early Pythagorean thought there was no distinction between the intelligible and the material world of nature, when he writes that the Pythagoreans 'say that the things themselves are numbers, and do not place the objects of mathematics between forms and sensible things' (Aristotle *Met.* 987b28, 1984, 1562; Kahn 2001, 55).<sup>50</sup> As Christopher Celenza has pointed out, for the Pythagoreans 'the distinction, essentially of material versus immaterial reality, simply was not there. (...) For the Pythagoreans, the universe at the outset was One, and breathed in the two principles, Limit and Unlimited (essentially transcendental), which led to the separation of heaven and earth' (Celenza 1999, 704). The Pythagorean number theory was primarily cosmogonic, a reflection on the birth of the universe.

Reflexive re-reading of cosmogonic number theology is beyond the scope of this thesis, but I would like to share a modern view on this subject with my reader. The psychologist Carl Jung has called numbers 'archetypes' and amplified on them by writing:

One, as the first numeral, is unity. But it is also "the unity," the One, All-Oneness, individuality and non-duality – not a numeral but a philosophical concept, an archetype and attribute of God, the monad. (...) The infinite series of natural numbers corresponds to the infinite number of individual creatures. That series likewise consists of individuals, and the properties even of its first ten members represent – if they represent anything at all – an abstract cosmogony derived from the monad' (Jung 1995, 341).

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<sup>50</sup> Aristotle is referring to Plato's theory of form, ἰδέα or εἶδος, as the permanent reality which makes a thing what it is, in contrast with the particulars which are finite and subject to change.

The cosmogenic aspect of numbers is well illustrated by connecting them with dimensions: the number 1 is connected to the point, 2 to the line, 3 to the plane figure (triangle) and 4 to the body (tetrahedron or four-sided pyramid). In this way, as the series of the first four numbers enfold, a three-dimensional space is created, which could be embracing mind, or matter, or both. As the first four numbers add up to 10, the Pythagoreans in time developed a complete ‘theology of arithmetic’ based on the first ten numbers.<sup>51</sup> The basis for this philosophy of number was already expressed in Philolaus’ cosmology of ten heavenly bodies, revolving not around the earth but around a central fire: the sphere of fixed stars, the five planets, sun, moon, earth, and a counter-earth (Joost-Gaugier 2007, 88). It is possible that these ideas go back to Pythagoras himself (Kahn 2001, 38).

For the Greeks, number and irrationality were mutually exclusive (Burkert 1972, 455). A sacred proportion that could not be expressed in whole numbers was therefore unthinkable to the Pythagoreans. They consequently refused to consider the possibility of a musical consonance based on an irrational ratio and thus excluded the possibility of tuning by what is now called equal temperament. For Burkert, this was a mistake, caused by the fact that the Pythagoreans overlooked the fact that it is not the number of vibrations itself which is the question, but the number per time unit (Burkert 1972, 370 n. 4). However, Burkert also states: ‘the wondrous potency of music, which moves the world and compels the spirit, captured in the net of number – this was a cardinal element of the secret of the universe revealed to the wise Pythagoras. (...) Pythagorean musical theory is intimately related to numerical cosmology, and the importance of superparticular proportion comes from its relation to number speculation in general’ (Burkert 1972, 378; 384). For Burkert, Pythagorean mathematics of music are not *Wissenschaft* but *Weisheit*. In my opinion, the essence of Pythagorean philosophy is the symbolical meaning of whole numbers, not the construction of the scale.

To illustrate this point, let’s have a closer look at the Pythagorean theorem. In words, it says that the square of the hypotenuse is equal to the sum of the squares of the other

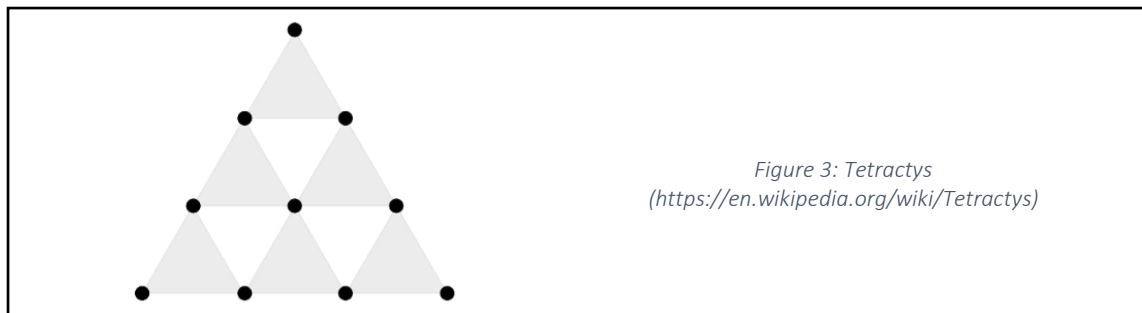
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<sup>51</sup> In the *Theology of Arithmetic*, a fourth century compilation of Pythagorean arithmology, the first ten numbers are connected to cosmic principles and to musical consonances (Waterfield 1988).

two sides. As an equation, it reads:  $a^2 + b^2 = c^2$ . At first sight, this seems plain mathematics. But Burkert tells us that ‘the theorem had more than mathematical significance in Pythagoras’ school, and that the numbers involved seemed in a cryptic way meaningful’ (Burkert 1972, 429). He points to the form of the tradition that only mentions the triangle with the sides of the whole numbers 3, 4, and 5, thus stressing the qualitative, symbolic power of the whole numbers involved, rather than the quantitative aspects (ibid.).

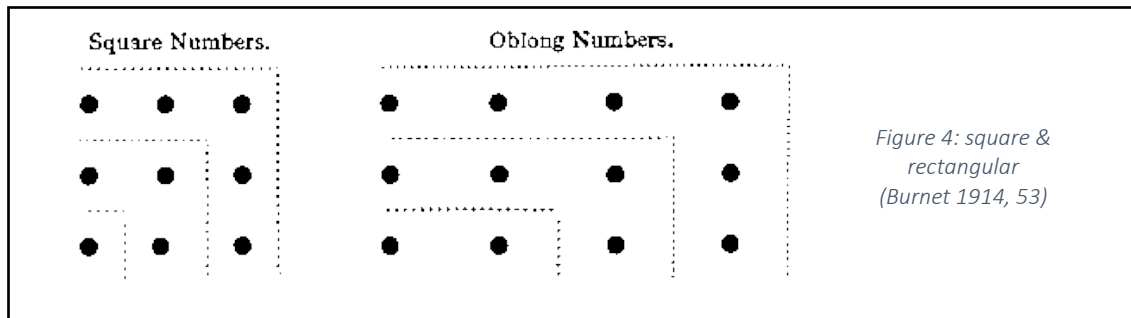
Another example of Pythagorean numerology is the *tetractys* (figure 3). This is what Sextus Empiricus (c. 160 – 210 CE) tells us:

The Pythagoreans ... are in the habit of sometimes saying ‘All things resemble number’, and of sometimes swearing this most fundamental oath: ‘No, by him that gave to us the *tetraktys*, which contains the fount and root of ever-flowing nature.’ By ‘him that gave’ they mean Pythagoras (for they deified him); and by ‘*tetraktys*’ they mean a number which, being constituted out of the first four numbers, fits together the most perfect number, as for instance ten: for one and two and three and four becomes ten. This number is the first *tetraktys*, and is described as the ‘fount of ever-flowing nature’ in as much as the whole universe is organised on the basis of these numbers according to *harmonia*; and *harmonia* is a *systema* [scale] of three concords, the fourth, the fifth and the octave; and the proportions of these three concords are found in the four numbers previously mentioned, in one, two, three and four (Sextus Empiricus Adv. Math. VII.94-5; tr. Barker 1989, 30).



The *tetractys* is a complete symbol for the musical-numerical order of the cosmos (Kahn 2001, 32). According to Francis Cornford, it symbolizes the evolution of the many out of the One, the cosmogonical process (Cornford 1923, 4). The number one, the Monad, was the divine, all-inclusive unity, containing both the opposites, male and female, Limit and Unlimited, and thus a paradox. From the undifferentiated unity emerge the two opposite principles, and these are recombined to generate determinate (limited) things – the series of numbers and the things which represent or embody numbers (Cornford 1923,

5).<sup>52</sup> Related to the *tetractys*, representing triangular numbers, are the Pythagorean figures for square numbers and rectangular numbers (figure 4). Note that the rectangular proportions proceed as the consonances 2:1, 3:2, 4:3 etc. (Burnet 1914, 53).



The picture that arises from early Pythagorean philosophy is a fascination with the *symbolic* meaning of number, on which cosmic music was based. It would be much harder to construct cosmic music on the mathematics of, for instance, Archimedes; for that reason, the Neoplatonists would return to an archaizing, Pythagorean version of mathematics (Reviel Netz in Huffman 2014, 184). Pythagorean mathematics were essentially metaphysics, connected to a religious way of life. Pythagoreans consciously chose a lifestyle that was very different from Greek society in order to aspire to a religious life, including mathematics and music. The key concept of that lifestyle was derived from music: *harmonia*.

### Harmonia

Pythagoras was said to have coined the term κόσμος (*kosmos*), meaning adornment, for the ordered universe. To the Greeks, *cosmos* had its origins in a pre-existing *chaos*. As Andrew Gregory puts it, ‘a *kosmos* for the ancient Greeks was not only a well-ordered place, but had connotations of moral and aesthetic beauty as well’ (Gregory 2007, 1). Greek cosmology is the theory of an ordered universe, manifested foremost by the movements of the seven heavenly luminaries, a *cosmos* which not only directly reveals beauty but reflects the beauty of whatever brought order to it from the preceding *chaos*. For the Pythagoreans, the ordering principle was *harmonia*. It was an all-encompassing

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<sup>52</sup> Pythagorean numbers started from the number 2. The number 1 was the source of all numbers and not a number itself. 0 (zero) as ‘nothing’ was unknown. The Italian mathematician Fibonacci (c. 1170 – 1250) is credited with the introduction of the Hindu-Arabic numeral system and the 0 symbol to the Western world. See Devlin, Keith (2011) *The Man of Numbers. Fibonacci’s Arithmetic Revolution*.



principle, containing contrary elements, yet within a whole, according to perfect proportions. I suggest that the manifestation *par excellence* of *harmonia* was cosmic music.

*Harmonia* in ancient Greek meant ‘disparate parts joined together’, in music ‘tuning’, the different positions of the notes within the octave (Michaelides 1978, 127). Geoffrey Kirk writes that *harmonia* had for the Pythagoreans a general, indeed cosmic, significance (Kirk 1983, 233). ‘There is something rather magnificent about the Pythagoreans’ attempt to show how the governing concept of *harmonia* unlocks the key to every area of philosophy: cosmology, astronomy, psychology; even (...) ethics and politics (Kirk 1983, 350). As Wayne Bowman writes: ‘health, virtuous character, spiritual wellbeing, the well-ordered state, the interdependence and essential orderliness of the manifold parts of the universe: almost all things good, it seems, seem to have been attributable in some degree to the influence of this magical force’ (Bowman 1998, 32).<sup>53</sup> Plato, in his dialogue *Cratylus*, has Socrates pointing to the fact that Apollo is the god of harmony; musicians and astronomers both declare that he makes all things move together by a harmonious power (404E-406A, 1937, 194-195).<sup>54</sup> *Harmonia* was an all-encompassing theory and practice. Did Pythagoras apply the theory of cosmic *harmonia* to actual sounding music? The only source for this is the Neoplatonic philosopher Iamblichus (245 - 325 CE), who was engaged in constructing an image of Pythagoras as a divine sage of pagan wisdom (O’Meara 1989).

When [his disciples] arose in the morning, [Pythagoras] would free them from the night’s heaviness, coma and torpor through certain peculiar chords and modulations, produced by either simply striking the lyre, or adapting the voice. Not through instruments or physical voice-organs did Pythagoras effect this; but by the employment of a certain indescribable divinity, difficult of apprehension, through which he extended his powers of hearing, fixing his intellect on the sublime symphonies of the world, he alone apparently hearing and grasping the universal harmony and consonances of the spheres, and the stars that are moved through them, producing a melody fuller and more intense than anything effected by mortal sounds (Iamblichus *The Life of Pythagoras*, translation Guthrie 1987, 72).

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<sup>53</sup> To John Strohmeier, Lore and Science, *Weisheit und Wissenschaft*, are linked in Pythagorean thought by a unifying vision, a vision that is summed up in the word *harmonia* (Strohmeier 1999, 132). Francis Cornford stresses the ordering effect of *harmonia*, ‘bridging and binding together the visible order from earth at the centre to the outmost sphere of the fixed stars’ (Cornford 1923, 5).

<sup>54</sup> Edward Lippman points out that this discussion links music, prophecy, medicine, and archery, as the four attributes of Apollo, and also points to harmony as the unifying factor (Lippman 1964, 21).

True or not, this presents us with an interesting aspect of the Pythagorean way of life, namely the communication of divine proportion directly through music. From Pythagoras' time on there were several, very different, theories that connected the planets to a musical scale. The most common form is a connection of seven heavenly bodies to seven notes from a seven-stringed lyre. Plato and Aristotle speak of eight notes, incorporating the sphere of the fixed stars. Philolaus taught there were ten heavenly bodies, because of the perfect number ten. Burkert concludes that 'the idea of cosmic music is not bound to any particular astronomical system' (Burkert 1972, 355). 'It comes from a deeper root, a pre-scientific conception of order' (Burkert 1972, 357). I couldn't agree more. There was no use in figuring out heavenly music by putting up a telescope; one had to find the inner 'deeper root', the harmony of the *ensouled* cosmos.

### *Soul and sky*

According to Iamblichus, Pythagoras could grasp the harmony of the cosmos because of his connections to the divine; Iamblichus believed Pythagoras was sent to mankind from Apollo's domain (Guthrie 1987, 58-59). At the heart of the Pythagorean movement is the conviction that the adept can aspire to this divine status of the sage. Pythagoras started a community of followers who not only absorbed his teachings but also imitated his way of life. Above I have already mentioned the characteristic Pythagorean concepts of the ideal of 'becoming like a god' and the transmigration of the soul. These were innovative ideas in the Greek world. Iamblichus' teacher Porphyrius (234-305 CE) described Pythagoras and his teachings thus:

What he said to his associates, nobody can say for certain; for silence with them was of no ordinary kind. Nonetheless the following became universally known: first, that he maintains that the soul is immortal; next, that it changes into other kinds of living things; also that events recur in certain cycles, and that nothing is ever absolutely new; and finally, that all living things should be regarded as akin. Pythagoras seems to have been the first to bring these beliefs into Greece. (Porphyrius *Life of Pythagoras* 19 (K 14, 8a); in Kirk 1983, 238).

The Pythagoreans shared the practice of silence, in the sense of attentive listening and reticence concerning the sacred, with the Greek mystery religions (M. Laura Gemelli Marciano in Huffman 2014, 144). However, reincarnation of the soul after death was an un-Greek element in Pythagoreanism, not a doctrine of the mysteries. Theories on the concept of soul abound in Pythagoras' times. The Pre-Socratic philosophers investigated

the soul as the life principle. In the Greek mystery cults, life beyond the grave was a central issue. Geoffrey Kirk has noted parallels of the Pythagorean concept of the soul with the eschatology of the Eleusinian Mysteries. South Italy and Sicily were the home of various mystery cults concerned with death, which may have been important for the Pythagoreans' concern with the afterlife (Kirk 1983, 213).

Although there are striking parallels between Pythagorean thought and the theories of the Orphic tradition, modern assessments of the connection between the two movements are widely divergent (Gábor Betegh in Huffman 2014, 151). Probably, Pythagoreans and the Orphic writers borrowed ideas and practices extensively from each other (Kingsley 1995, 115). Orphic writing resembled early Pythagoreanism on subjects like the power of music, the importance of theories on the origins of the world, the distinction between body and soul, stress on purification and vegetarianism (Kirk 1983, 221-222). However, the movements differed on important points; the Orphic cult was based on written texts, the poetry of Orpheus, while the Pythagoreans relied on an oral tradition. Orphism was associated with the Bacchic cult of Dionysus, while the Pythagoreans worshipped Apollo. Orphism did not involve the study of mathematics and it did not establish a lasting community (Kahn 2001, 21).<sup>55</sup> The social dimension of the *bios pythagorikos* had no counterpart in a distinct Orphic way of life (Gábor Betegh in Huffman 2014, 159). For the purpose of investigating cosmic music in the sense of heavenly harmony, it is not productive to explore the Orphic connection to Pythagoreanism, because there is no evidence that the Orphic movement connected music in any significant way with the heavens.<sup>56</sup>

That the human soul had a very close relationship to the sky and the stars, and even that it comes from heaven and returns to it, was a generally held belief in Ionian philosophy from the time of Heraclitus and Anaxagoras (Burkert 1972, 362). In the fifth century BCE, astral eschatology and astral immortality seems to have been well established (Burkert 1972, 360; Wright 1995, 122). There could also be an influence on Pythagoras' theories

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<sup>55</sup> Burkert (2004) signals possible strong connections of Orphism and Egyptian religion, which I think is quite different from the Pythagorean mentality.

<sup>56</sup> For instance, the Orphic Hymns *To Sky*, *To the Sun* and *To the Stars* do not mention music. The hymn *To Apollo* mentions cosmic harmony, but seems to draw on Ptolemy (Athanasakis 2013, 136).

from his supposed contacts with the Egyptians and Babylonians. To the ancient Egyptians, the gods belonged to the world of the stars, and human spiritual realisation was understood to require an initiatory journey that took one beyond the earth to the realm of the stars (Naydler 2009, 249-250). Music was an integral part of religious worship in ancient Egypt and often women are depicted as musicians. There is no doubt that Pythagoras borrowed theories from the Egyptians, but to what extent is impossible to say. There is also little doubt that the Greeks, and Pythagoras among them, borrowed substantially from Babylonian science. Foremost this consisted of astronomical and astrological concepts. Franz Cumont has shown that Pythagoras' system of numbers and geometrical figures, designed to represent certain gods, is in accordance with Babylonian astrological theories.<sup>57</sup> But a systematic connection between gods, numbers, geometrical figures and stars or planets cannot be assigned to Pythagoras or the early Pythagoreans. It was only in the Late Hellenistic period that the concept of the afterlife as positioned in the realm of the stars, that man's soul came from the skies and will return there some day, became dominant throughout the Mediterranean world, both in works of literature and in the art and the inscriptions found on gravestones (Burkert 1972, 358-359). Altogether, it seems relatively safe to assume that it was indeed Pythagoras who first introduced some connection between the immortality of the soul and the heavenly harmony to the Greek world. The doctrine implied a return of the soul to the sacred, connected to a restoration of wholeness, which included cosmic music. In Pythagorean philosophy, the redemption of the soul was never separated from musical healing (Iamblichus *Life of Pythagoras*, 15; Guthrie 1987, 72).

### *Musical healing*

The roots of the connections between music and the divine go back to prehistoric animism. Martin West writes that 'the most primitive musical instruments had the potential to be used for magical purposes, and specifically for the purpose of conjuring spirits from the other world' (West 2000, 51). The most ancient musical instruments in Europe and Asia were the drum, the bow, the flute and the horn, all made from animal remains. The magic of music was primarily connected to waking up the spirit of the

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<sup>57</sup> For instance, the dodecagon bears the name of Jupiter because this planet traverses the circle of the Zodiac in twelve years (Cumont 1960, 25-26).

animal, from which the bodies of these instrument were produced. An echo of this animistic music magic may be heard in the Pythagorean belief that the ringing sound of bronze when struck was the voice of a *daimon* imprisoned in the metal (Porphyrius quoting Aristotle in Kirk 1983, 236; see also West 2000, 56). There is no contradiction between the Pythagorean interest in the mathematical aspects of the physical world and its magical properties, as they would consider magic as applied physics (Kingsley 1995, 229). The Pythagoreans made systematic use of music for therapeutic purposes of soul and body (West 2000, 56; 60). Pythagoras himself is said to have cured emotional sickness through music therapy induced by playing his lyre (Joost-Gaugier 2009, 7). Pythagoras thus became the archetypal founder of music therapy in the West. Although it is very likely that Pythagoras and the early Pythagoreans practised music both as music therapy and as a revelation of sacred wisdom, this was written down hundreds of years later and there is no evidence in the known texts of the earlier period.

### *Archytas and Plato*

The last and greatest of the early Pythagoreans who stood in direct succession to the founder of the Pythagorean school was Archytas of Tarentum (428–347 BCE). He was a philosopher, an eminent mathematician, a successful statesman, a military commander, and a respected friend of Plato (Barker 1989, 29). In contemporary scholarship, it is sometimes assumed that Plato's friendship with Archytas and the Pythagoreans of Magna Graecia led to Plato's change from Socratic dialogue to the cosmogonic monologue of the *Timaeus* (Lloyd 1990, 173). Archytas sent a ship to rescue Plato from the clutches of the tyrant of Syracuse, Dionysius II, in 361, but his personal and philosophical connections to Plato are complex, and there are signs of disagreement between the two philosophers. Fideler writes: 'This particular difference between the earlier Pythagoreans and Plato must have manifested itself in the sphere of *praxis*. For Plato (....) truth must be approached through the intellect, and through the intellect alone. For the Pythagoreans, truth manifests itself through the world of physical phenomena' (Fideler in Guthrie 1987, 35). This difference of attitude is reflected in the way Archytas treated the science of

harmonics, allowing practice to divert from mathematical theory.<sup>58</sup> Kahn suggests that Plato thought of Archytas as an excellent mathematician, but a bad philosopher (Kahn 2001, 46). In the next chapter, I will explore how Plato used some Pythagorean ideas.

### *The Pythagorean roots*

Starting from Pythagoras' supposed experience of cosmic music, I have shown how the Pythagoreans introduced new, un-Greek ideas and a new way of life, with the aim of connecting to the sacred, which I, like Qutb al-Din al-Shirazi and Walter Burkert, reflexively re-read as connected to a shift of consciousness. Number was the essence of a sacred order, and nowhere was this better expressed for the Pythagoreans than in cosmic music, paradoxically unperceivable because permanent.

It is difficult to say whether or how the Pythagoreans related these ideas to actual making music, as a *living* paradox. Although the symbolic element was paramount in Pythagorean thought, less evident were Gadamer's elements of 'play' or 'festival'. According to the researcher of 'speculative music' Joscelyn Godwin, perhaps Pythagoras failed as the prophet of a *practice* of cosmic music for antiquity, and his ideas had to wait a flowering in another age (Godwin in Guthrie 1987, 13-14).<sup>59</sup> The roots of Pythagorean cosmic music are not so easy to uncover, as they remained largely below the surface; only when ancient cosmic music emerged several centuries later in Plato's philosophy we have a clear, but quite different picture, to which I turn in the next chapter.

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<sup>58</sup> As Barker has noted, 'Archytas attempted both to analyse the attunements underlying contemporary musical practice, and to reveal the principles of mathematical order on which they were based. He was satisfied that the harmonic structure, described by Philolaus and adopted by Plato as metaphysically important in the *Timaeus*, did not appear as a system to which any instrument was actually tuned. It was modified by musicians to achieve aesthetic variety. Plato will not have been altogether happy with Archytas' application of his theory, since he had allowed himself to be diverted from the further pursuit of issues in pure mathematics, into the 'futile' task of describing and justifying the patterns of attunement that musicians actually employed' (Barker 1989, 52).

<sup>59</sup> For Godwin's theories and writings on 'speculative music', see Appendix 1. For his prophecy of Pythagoras' New Age, see chapter 9.

### 3. Plato's musical creation

As the eyes are designed to look up at the stars, so are the ears to hear harmonious motions; and these are sister sciences - as the Pythagoreans say. (Plato *Republic* VII 530d; 1937, I. 790)

Plato (429-347 BCE) was undoubtedly the most influential philosopher of the ancient world. This chapter addresses Plato's musical cosmology and its indebtedness to the Pythagoreans, not so much as an introduction to a system of thought, but as a reflection on the experience of 'star music' as a paradox. As far as I know, Plato did not make any music himself, but as the architect of an influential musical cosmology he occupies a central position in the historical development of the idea of cosmic music.<sup>60</sup>

#### *Plato the Pythagorean*

In the quote above, Plato is apparently paraphrasing Archytas' fragment no. 1: 'for these sciences seem to be sisters' (Barker 1989, 39; Kahn 2001, 55). Charles Kahn states that the musical cosmology of the Pythagoreans 'receives its definitive expression in Plato's *Timaeus*, where the world soul is structured by the musical ratios' (Kahn 2001, 4). Stephen Gersh has remarked that 'from Plato's *Timaeus* onwards the entire numerical aspect of Pythagoreanism, and much else besides, was totally absorbed into Platonic metaphysics'. It was this amalgam, together with successive expansions by later Platonists, that was bequeathed to the Medieval Latin, Arabic, and Byzantine worlds, and passed on to Renaissance Italy (Gersh 2008). According to Christiane Joost-Gaugier, 'virtually all writers from Cicero on through the Renaissance considered Plato a Pythagorean. Later Antique writers considered Plato's *Timaeus*, above all, a Pythagorean work' (Joost-Gaugier 2007, 90). However, as Charles Kahn has shown, the historical fusion of Pythagoreanism and Platonism was the result of the attribution of Platonists metaphysical doctrines to the Pythagoreans. This process perhaps started already in Plato's own lifetime, and it became general practice in the early Platonic Academy (Kahn

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<sup>60</sup> Quoting Plato, I use the *Complete Works* edited by John M. Cooper (Plato 1997); however, sometimes I prefer different translations to convey Plato's poetic style, like the translation by Desmond Lee of the *Timaeus* (Plato 1965). This chapter uses a broad variety of secondary sources on Platonism and the *Timaeus*; from the standard work of Francis Cornford (1937) to recent publications like Richard Mohr's conference collection *One book, the whole universe. Plato's Timaeus today* (2010).

2001, 65). In the Renaissance, one may even find Plato misrepresented as the disciple of Philolaus, based on pseudonymous forgeries of late antiquity. However, the influence of Plato as a writer dwarfs Pythagoras' contribution to the history of the idea of cosmic music. Where Pythagoras himself left no more than a few cryptic aphorisms, Plato presented humanity with an elaborate oeuvre, which was transmitted to posterity in its entirety. We must thus consider the musical cosmology of antiquity as largely the creation of Plato, incorporating Pythagorean elements, but subordinating them to *his* philosophy. As John Palmer has argued, in his later works Plato moved beyond his Socratic inheritance, to the Pythagorean vision of order in the cosmos (Palmer in Huffman 2014, 205). In the *Republic*, Plato integrated the Pythagorean mathematical quadrivium into the philosophical education, and stressed its goal to see the sacred nature of numbers, as a pursuit of the Beautiful and the Good (*Rep.* 7.525c1-3 and 7.531c6-7). This, as I have shown in the previous chapter, is not contemporary mathematics but ancient theology. Plato also developed the Pythagorean the concept of the immortality of the soul by stressing its self-moving quality, resembling the heavenly bodies (Palmer in Huffman 2014, 212). This quality of movement is a special focus of this chapter. It is beyond my research to explore the entire range of Pythagorean or musical elements in Plato's thought.<sup>61</sup> The dialogue that is saturated with Pythagorean elements is the *Timaeus*; it was also the most influential work of Plato. For that reason, I will take a close step-by-step look at it in this chapter.

### *Timaeus*

The *Timaeus* dialogue is one of Plato's later dialogues, in which he takes a relatively positive view of nature and the world of change (Kahn in Mohr 2010, 69). It is called after its main fictional character, a Pythagorean philosopher from Locris in southern Italy, and probably a dedication to Archytas (Kahn 2001, 56). Timaeus tells his story of the creation

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<sup>61</sup> More on Pythagorean and musical elements in Plato can be found in Francis Cornford (1937) *Plato's Cosmology*; Walter Burkert (1972) *Lore and Science in Ancient Pythagoreanism*; Vlastos (1975) *Plato's Universe*; McClain (1978) *The Pythagorean Plato: Prelude to the Song Itself*. A promising, but not yet established, angle is presented by Jay Kennedy in his book *The Musical Structure of Plato's Dialogues* (Durham: Acumen Press, 2011).



of the universe, including humankind. Plato was the first philosopher to present a fully teleological cosmogony (Gregory 2007, 140). The world that Timaeus describes is based on intelligent design, as distinct from a meaningless product of chance. The creator, called Demiurge, 'craftsman god', forms a unique *kosmos* from a pre-existent chaos characterised by 'inharmonious and disorderly motion', to make it 'in every way better'.<sup>62</sup> Plato implicitly presents arguments to sustain a theory of the meaningfulness of human existence, by pointing at the goodness of the order in creation and, in particular, in the heavens. *Oouranos*, heaven, is used throughout the dialogue as a synonym for *kosmos* (Cornford 1937, 22 n. 3). The heavens exhibit the divine order *par excellence*, because the demiurge introduces a harmonious order into the world soul (*ψυχὴ κόσμου*, *anima mundi*, *Tim.* 35a6-8), which in turn rules the movements of the stars.

For Plato, there can never be true knowledge of natural things because they are always changing (Cornford 1937, 29). Plato introduces his creation myth by differentiating unchanging 'Being' from everchanging 'Becoming' (*Tim.* 27d). Although the sensible world belongs to the realm of 'Becoming', the heavenly luminaries reflect the eternal quality of 'Being' (Fideler 2014, 84). Plato himself calls the speech of Timaeus a 'likely story', because in accounting for the world of change one should be satisfied with myth rather than attempt an 'irrefutable and incontrovertible' description (*Tim.* 29c). Already in antiquity there was a debate on the question whether the entire story should be taken literally (Aristotle) or metaphorically (Xenocrates and virtually all the Neoplatonists) (Gregory 2007, 147, 218). Francis Cornford has pointed out that Plato's rational inquiry came forth from myth, and therefore the whole creation story has traces of both (Cornford 1991, 260). In 2002, Tim Addey has argued that Plato used philosophical myth to present a holistic vision of truth.<sup>63</sup> It seems that in Plato's thought, faith and reason cannot always be separated.

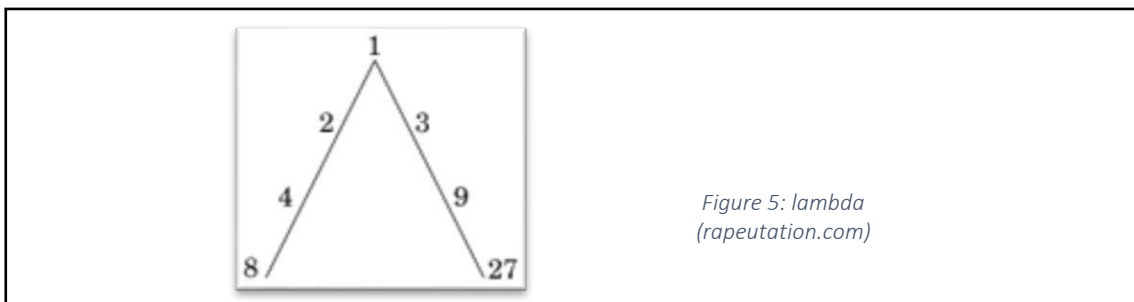
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<sup>62</sup> 'God therefore, wishing that all things should be good, and so far as possible nothing be imperfect, and finding the visible universe in a state not of rest but of inharmonious and disorderly motion, reduced it to order from disorder, as he judged that order was in every way better' (*Tim.* 30a; Plato 1965, 42).

<sup>63</sup> See Tim Addey (2002) *Myth - the Final Phase of Platonic Education*. The Prometheus Trust website. Source: [http://www.prometheustrust.co.uk/html/myth\\_-\\_philosophy.html](http://www.prometheustrust.co.uk/html/myth_-_philosophy.html). Accessed 12/05/2017.

### *The soul of the world*

A central place in the *Timaeus* is given to the concept of the 'soul of the world', which originated in Presocratic philosophy.<sup>64</sup> To achieve the best result, the creator constructs the material world as a living being in the likeness of an eternal model, implanting intelligence/reason ('nous') in soul ('psyche'), and soul in body (*Tim.* 30). The world soul comprises in itself all intelligible beings, individually and generically (*Tim.* 30d). It is the dominating and controlling partner of the physical world, consisting of a mix of indivisible, eternally unchanging components and divisible, changing components (*Tim.* 34d-35a). The world soul is invisible, containing the visible world, fitted together centre to centre, a 'divine source of unending and rational life for all time' (*Tim.* 36d). At the centre of the Platonic universe is the 'earth, our nurse, winding round the axis that stretches through, the guardian and maker of night and day, first and most venerable of all the gods that are within the heaven' (*Tim.* 40bc). The movement around an axis is necessary to counteract the movement of the world soul, which is revolving from the centre to the extremity of heaven (*Tim.* 36e).<sup>65</sup>



Plato describes the order which the Demiurge imposes on the world soul as markings on a strip, represented mathematically by the series 1-2-3-4-8-9-27. Crantor, author of the first commentary on the *Timaeus*, related a diagram (figure 5) based on the Greek letter lambda, visualising the relationship between these numbers (James 1993, 46). The diagram was likened to the *tetractys*. Plato was probably using Pythagorean

<sup>64</sup> Charles Kahn argues that 'the conception of the universe as *empsychon*, alive and hence "ensouled," was implied from the beginning in the Presocratic use of microcosm-macrocosm analogies. But what is implicit in this Presocratic tradition becomes explicit in *Philebus* 30a-c, where Socrates argues (1) that our *psyche* (soul) must be derived from a world soul, just as the elements of our body are derived from corporeal elements in the cosmos, and (2) that the causal action of *nous* in the cosmos could not exist without a cosmic soul' (Kahn in Mohr 2010, 73).

<sup>65</sup> The axis is described in the *Republic* as the 'Spindle of Ananke' (Plato *Republic* X 617).

mathematics; on the left side are the even numbers, representing the unlimited; on the right are the odds, signifying the limited. The series comprises of 1 and 2, their sum (3), squares (4 and 9) and cubes (8 and 27). It is assumed that Plato stops at the cubes because they represent the third dimension, the limit of corporal things, bodies into which the soul must proceed (Handschin 1950, 7). The Demiurge fills up the spaces between the seven integers in small steps. The resulting series between the first two integers (1 and 2) is:

1	$\frac{9}{8}$	$\frac{81}{64}$	$\frac{4}{3}$	$\frac{3}{2}$	$\frac{27}{16}$	$\frac{243}{128}$	2
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These are the same mathematical proportions as the Pythagorean scale (see above, chapter 2, p. 28). When all the spaces of the lambda have been filled up, the world soul appears to be ordered with the proportions of a Pythagorean scale of four octaves (integers 1-16) plus a major sixth ( $\frac{27}{16}$ ). That could not have been a scale that was used in musical practice, as no ancient instrument had the necessary compass (Barker 2007, 321). The structure of the scale is thus generated by mathematical, rather than acoustic considerations (Kahn 2001, 56). Numerous scholars have tried to work out Plato's set of cosmic numbers in a causal relation to musical intervals, none convincingly leading to a *practice* of music (Handschin 1950, 24-31). I prefer to see Plato's theory as 'isomorphic resonance'; the ratios that govern music reverberate with the ratios of the cosmos, from the individual to the whole (Bonds 2014, 30).

The mathematical construction of the world soul represents a genuinely Pythagorean blend of number, theory, geometry and musical harmony. Astronomy, the fourth member of the Pythagorean quadrivium, is included by the construction of the celestial equator and ecliptic, in the following way: when the Demiurge has finished dividing the strip, he cuts it into two parts to form a shape like the letter X and bends these into circles and endows them with uniform motion. The two circles move with a contrary motion; one supports the fixed stars as a whole with a slow, regular movement. The other, cut up into seven smaller circles of unequal size, supports the seven luminaries: sun, moon and planets, the 'wandering stars' with their seemingly irregular motions of (*Tim.* 36). Because the sun is subject to two different circular motions, its path in the sky displays a spiral twist, accounting for the seasons (*Tim.* 39b; Vlastos 1975, 57). The irregular movements

of the other luminaries Plato leaves unexplained. The distances between the planetary rings correspond in some unspecified way to the six intervals of the 'lambda': 'the double and triple intervals' 1-2-3-4-8-9-27 (*Tim.* 36d; Cornford 1937, 79). The Timaeian universe is Platonic, different from the Pythagorean, because Plato has reworked Pythagorean elements into the picture of a new cosmology, at once highly symbolic and mathematically precise, and the work of a creator god (Kahn 2001, 57).<sup>66</sup>

Plato makes a special connection between the world soul and the perfect circle (Vlastos 1975, 63). The demiurge proceeds to fashion the whole corporeal world within the circular world soul, fitting the two together centre to centre. 'The body of the heaven is visible, but the soul invisible and endowed with reason and *harmonia*, being the best creation of the best of intelligible and eternal things' (*Tim.* 36; Plato 1965, 50). The order of the heavens derives from circles and mathematical ratios, but there is in the *Timaeus* no clear relationship between the stars and number (Cornford 1937, 79). It seems Plato puts down a principle and does not much care how it will be carried through (Handschin 1950, 14). Numerous cosmologists have attempted to fill the gaps in Plato's cosmology. Below I will present some, like Johannes Kepler, who proposed elaborate theories connecting the stars to music in his work *Harmonices Mundi* (1619). It may be questioned however, whether Plato's sketchy picture of astronomy is describing the order of the material or the mental aspects of his universe.

### *Re-reading the Timaeus*

What would a re-reading of Plato's cosmology yield? A rational re-reader will consider the Platonic system an outdated and mistaken geocentric model, irrelevant to contemporary science. The *Timaeus*, however, is cosmogony, not astronomy. A faithful re-reader will treat it as a philosophical myth, constructing purpose and goodness into creation, the imprint of the qualities of its maker that Plato is so keen to stress. Who is this 'ungrudging' craftsman, this good father? Cornford equates him with Zeus, who turned himself into Eros to make the world (Cornford 1991, 260). In the *Timaeus* there is

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<sup>66</sup> I like Alexander Mourelatos' remark that *Timaeus* is best considered to be 'symbolic psychometrics' (in Hendley 1987, 101).

no mention of power, but plenty of desire. Is the Demiurge a symbol for a cosmic *eros*? The god that Plato is introducing in the *Timaeus* is however too perfect to belong to the Olympian religion. Plato did not leave the Olympians out of his story but accepted them as subordinates, as he says in order to 'conform to custom' (*Tim.* 40c). Is Plato 'introducing a new deity', one of the charges on which Socrates was convicted?<sup>67</sup> There is no suggestion of the Demiurge as an object of worship in the *Timaeus*, although a cult of the heavenly bodies is recommended in the *Epinomis* (988a; Cornford 1937, 35).<sup>68</sup> The worship of the heavenly bodies points to a concept of the divine that was very different from the anthropomorphic Olympic religion. Unlike the immortal Olympians, the new gods of the *Timaeus* do not seem to be in need of a priesthood. But a political motive does not sound very convincing as the reason for Plato to attempt to introduce a new cosmology. Whether Plato introduced stellar divinity drawing on a Greek or an oriental tradition, it introduced alongside the belief in a stellar origin of the immortal soul, to which I will return below.

A reflexive re-reading of the *Timaeus*, as I will argue below, will yield the need to raise human consciousness to the level of the sacred order of the cosmos as its central doctrine.

### Time

Plato's theories on the nature of time and eternity hold some special interest for reflexive re-reading, as they are connected to the sacred. When the demiurge 'perceived that the universe was alive and in motion, a shrine for the eternal gods', he decided 'to make a moving image of eternity (αἰών), and so when he ordered the heavens he made in that which we call time an eternal image of the eternity which remains for ever at one' (*Tim.* 37c). Time, to Plato, is indicated by the celestial circular motions (Cornford 1937, 103);

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<sup>67</sup> Plato *Apology* 24b: 'Socrates is guilty of corrupting the young and of not believing in the gods in whom the city believes, but in other new spiritual things'; ed. Cooper (1997), 23.

<sup>68</sup> The *Epinomis* is often considered as not written by Plato. Stellar divinity may have been something new in Plato's time, although Cornford argues that Plato is reviving an older tradition of Greek religion (Cornford 1991, 135, 177). The Orphics, Cornford argues, had already revived the older nature-worship, in which the circle of the sky and the heavenly bodies rule the destinies of man (Cornford 1991, 178).

the movements of the stars reflect the eternal, which Cornford calls the cardinal doctrine of Platonism (Cornford 1937, 28). 'Time', says Plato, 'imitates eternity in its measurable cycles' and 'came into being together with the heavens' (*Tim.* 38b)<sup>69</sup> To Cornford, there is an important contrast to Plato's treatment of time and space: time is created by the demiurge, while space is a given frame, a necessary condition. In other words: time is due to reason, space to necessity (Cornford 1937, 102-103). Many ancient philosophers conceived time as a circle; space is filled by body and time by the circular movement of life, αἰών pertaining to both time and life (Cornford 1937, 103-104). The order that time introduces into matter is based on number. There are two more instances of 'ordering by number' in the *Timaeus*, namely the arithmetic ordering of the mixture of the world soul and the geometrical ordering of the elements (Sattler in Mohr 2010, 254). In human terms, the experience of universal time presupposes a standpoint *outside* time, which in Platonic psychology is provided by the soul. Music, aimed at reconnecting the soul with its source, should in line with Platonic cosmology make use of regular, slow movement; perhaps this is related to the use of slow metres by ancient Greek musicians when invoking the gods (West 1992, 155).

### *The human soul*

Plato continues his dialogue with the creation of human souls, which is the work of the Demiurge; the creation of human bodies is left to the stellar gods. Plato thinks that *both* the cosmos and individual humans have souls (Skrbina 2005, 35). In the *Timaeus*, human souls are made of the same harmonious mixture as the world soul but of inferior quality. The number of souls equal the number of stars. Before birth, the souls are shown the nature of the universe and sown into the Earth or into the planets. If they master their passions in life, they will return to their consort star and there enjoy a happy afterlife (*Tim.* 42b). The soul is itself responsible for any evil that it may suffer (Cornford 1937, 144). The strong sensations of the body make the human soul lose contact with reason and the world soul. If rationality is neglected, the soul will come back to *Hades* uninitiated

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<sup>69</sup> 'So time came into being with the heavens in order that, having come into being together, they should also be dissolved together if ever they are dissolved; and it was made as like as possible to eternity, which was its model. (...) As a result of this plan and purpose of god for the birth of time, the sun and moon and the five planets as they are called came into being to define and preserve the measures of time' (*Tim.* 38; Plato 1965, 52).

(*Tim.* 44c). The prescribed therapy is exercise, regular rhythmic movement or, as a last resort, purging by medicine (*Tim.* 89a; Moutsopoulos 116-117).

For Plato, sight has been given to humankind in order to ‘see the revolutions of intelligence in the heavens and use their untroubled course to guide the troubled revolutions in our own understanding’ (*Tim.* 47b). And that applies to *mousikē* (music, words and dance) as well, as Plato writes:

The same applies to sound and hearing, which were given by the gods for the same end and purpose. Speech was directed to just this end to which it makes an outstanding contribution; and all audible musical sound is given us for the sake of harmony, which has motions akin to the orbits in our souls, and which, as anyone who makes intelligent use of the arts knows, is not to be used, as is commonly thought, to give irrational pleasure, but as a heaven-sent ally in reducing to order and harmony any disharmony in the revolutions within us. Rhythm, again, was given us from the same heavenly source to help us in the same way; for most of us lack measure and grace (*Tim.* 47c; Plato 1965, 65).

Plato, in short, teaches that the ears are to be directed to heavenly harmony to restore the soul to its origin. This passage presents the main argument for the relevance of the ancient paradox of star music. Plato summarizes his message by stating that music gives ‘a thrill to fools and true enjoyment to the wise by reproducing divine melody in mortal movements’ (*Tim.* 80b; Plato 1965, 110). The clue is slow circular movement.<sup>70</sup>

### *The Chôra*

Just as we might be comfortably settling down with a dualistic description of creation as ‘Being’ and ‘Becoming’, made up of the unchanging model and the everchanging copy, Plato’s spokesman Timaeus introduces a third form of reality, which is non-rational, irregular, chaotic, the receptacle of becoming, necessity, the original principle of matter, the spontaneous power of generation, nature and chance combined, the factor that divine Reason has to persuade: the *Chôra* (*Tim.* 48, Cornford 1937, 167-210). Timaeus uses the metaphor of birth for the generation of things that become; he compares the *chôra* to the mother, and the model to the father (*Tim.* 50c).<sup>71</sup> The receptacle has to be

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<sup>70</sup> Richard Sorabji has drawn attention to the spatial nature of the circular movement, citing *Laws* 790d-791b where Plato explains that you rather rock a baby to sleep than keep it still, because rocking, like dancing, can influence the soul (Sorabji in Reydam-Schils 2003, 154).

<sup>71</sup> Cornford reduces this to a metaphor, derived from the sexual character of traditional Greek cosmogony (Cornford 1991, 70).

‘invisible and formless, all-embracing, possessed in a most puzzling way of intelligibility, yet very hard to grasp’ (*Tim.* 51a). Timaeus then settles for *three* forms of reality before the world came into existence: being, becoming and space (*Tim.* 52d). ‘Space’, however, should not be understood as our three-dimensional emptiness, because the receptacle is malleable and subject to motion; perhaps ‘field’ is a better term (Zeyl in Mohr 2010, 122 ff.). The *chôra* cannot be grasped by the mind or the senses, it is ‘scarcely believable’ and is ‘looked at in a kind of dream’ (*Tim.* 52b).<sup>72</sup> Gregory Shaw has argued that Aristotle and posterity have (mis)translated Plato’s thought into a dualist system, overlooking the subtlety and nuance of this vision (Shaw 2012, 105; 112). To Shaw, Platonism as metaphysical dualism of reason and matter (the Aristotelian *hulê*) is a misconstruction, and it should be replaced by a philosophy based on transformative *aporia*, rooted in a non-discursive and paradoxical source (Shaw 2012, 108-109). According to Shaw, this non-dualistic aspect of Platonism flowered in the ‘theurgy’ of Iamblichus and may be even called ‘tantric’, because it incorporates the *chôra* as *praxis* (Shaw 2012, 117, 125; below 58). Shaw builds his argument to a large extent on a recent (2007) publication of John Sallis, *The Verge of Philosophy*, which in turn builds on Jacques Derrida’s *Khôra*, but he adds that ‘for Platonists, the *chôra* is the anterior receptacle not only of the sensible world but of the intelligible as well’ (Shaw 2012, 126). In contemporary philosophy, some think that the appearance of the *chôra* undercuts and destabilizes Plato’s metaphysical dualism and the *chôra* may very well be interpreted as the transcendental foundation on which Plato’s dualism rests (Giannopoulou in Mohr 2010, 175). The *chôra*, clearly, is a paradox of the highest order.

### The Good

Timaeus continues the story of creation by comparing the *chôra* to a winnowing basket, which prepares the way for the demiurge to reduce the pre-existing chaos to elemental order with form and number (*Tim.* 53). He assigns to the four elements the four ‘best’ regular solids, namely the pyramid, octahedron, icosahedron and the cube, to which is

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<sup>72</sup> On this, Carl Jung uses the Gnostic term *pleroma* in his private, visionary writings (Storr 1992, 133).



added the dodecahedron, which the demiurge uses to fix 'animal patterns', the constellations of the Zodiac, to the universe (*Tim.* 55c).<sup>73</sup> Finally, Plato comes to a fitting completion of the creation story, the making of the human being. The Demiurge provides the immortal principle of soul, and his children, the gods, encase it in a mortal physical globe, the head, with a body for vehicle. The mortal part of the soul contains

terrible and necessary feelings: pleasure, the chief incitement to wrong, pain, which frightens us from good, confidence and fear, two foolish counsellors, obstinate passion, credulous hope, irrational sensation and desire which shrinks from nothing ... We must all try with all our might by education, by practice and by study to avoid evil and grasp its contrary (*Tim.* 69d, 87b).

Finally, Plato reveals the road to salvation, which consists of 'learning about the harmonious circuits of the universe'.<sup>74</sup> I agree with Cornford, who calls this passage the climax of the *Timaeus* (Cornford 1937, 355).<sup>75</sup> A reflexive re-reading of the *Timaeus* will eventually connect this road to salvation with Plato's other celebrated myth, the 'Allegory of the Cave', describing the ascent of consciousness from the shadows of mere opinion to the bright truth of the intelligible realm (*Republic* 514–520). There, the soul sees the sun as an image of the form of the Good, the cause of all that is correct and beautiful in anything. Perhaps Pythagoras was presenting an aural form of the Good with his idea of cosmic music.

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<sup>73</sup> The 'Platonic solids' play an important role in sacred geometry. Keith Critchlow connects the tetrahedron with the zodiac, because it has four triangular faces and four nodes (Critchlow 1976, 105).

<sup>74</sup> 'A man who has given his heart to learning and true wisdom and exercised that part of himself [intellect] is surely bound, if he attains to truth, to have immortal and divine thoughts, and cannot fail to achieve immortality as fully as is permitted to human nature; and because he has always looked after the divine element in himself and kept his guardian spirit in good order he must be happy above all men. There is of course only one way to look after anything and that is to give it its proper food and motions. And the motions that are akin to the divine in us are the thoughts and revolutions of the universe. We should each therefore attend to these motions and by learning about the harmonious circuits of the universe repair the damage done at birth to the circuits in our head, and so restore understanding and what is understood to their original likeness to each other. When that is done we shall have achieved the goal set us by the gods, the life that is best for this present time and for all time to come' (*Tim.* 90; Plato 1965, 121).

<sup>75</sup> Plato concludes the dialogue saying our world is a 'visible living creature, it contains all creatures that are visible and is itself an image of the intelligible; and it has thus become a visible god, supreme in greatness and excellence, beauty and perfection, a single, uniquely created heaven' (*Tim.* 50; Plato 1965, 124).

## Music

The whole story of creation can be taken as a model for the creative process of the artist, including the creative musician. It places art in general and musical composition in particular in a cosmological and religious context. Plato was not only a powerful thinker, he was also a creative writer with an elegant style. Plato's oeuvre can be read for sheer delight by anybody, in contrast with the majority of philosophical works. Can the Timaeian art of creation find application in music? Is the Demiurge the archetypal composer? In his early dialogue *Ion*, Plato writes that 'poets are only the interpreters of the gods by whom they are severally possessed'; then 'reason is no longer in [them]'. This attitude to poetry, and by analogy to music, pervades Plato's dialogues (Barker 1984, 125). However, Socrates was often prompted by dreams to practise and compose music.<sup>76</sup> Iris Murdoch has written a celebrated analysis of Plato's view on art and concludes that the *Timaeus* takes 'a modest view of human creative ability'; 'the proper activity of the human artist is in simple ways to discern and emphasize and extend the harmonious rhythms of divine creation: to produce good design rather than pretentious rival objects' (Murdoch 1977, 57). In her understanding, Plato would favour 'pure unpretentious very simple art', just as Plato prescribes 'artefacts to be offered to the gods should be such as can be made in a single day' (*Laws* 956b; Murdoch 1977, 71). Portnoy argues that Plato would not allow music without poetry (Portnoy 1954, 17). Whatever the value of music we may read into the *Timaeus*, there is no such thing as a philosopher-musician in the Platonic dialogues.

A crucial theory that the *Timaeus* provides for a musical practice is the circular movement of the soul, mirroring the movement of the heavens. Good music should be 'a heaven-sent ally in reducing to order and harmony any disharmony in the revolutions within us' (*Tim.* 47c). When the immortal soul is fastened to the body the creature loses contact

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<sup>76</sup> Plato has Socrates say: 'In the course of my life I have often had intimations in dreams 'that I should make music'. The same dream came to me sometimes in one form, and sometimes in another, but always saying the same or nearly the same words: 'Set to work and make music', said the dream' (*Phaedo* 60e, trans. Jowett 1937, I 410). Socrates takes this as an exhortation to the study of philosophy, but under the sentence of death he is not so certain of this anymore and accepts music in the popular sense of the word to be the command. See also Pelosi (2010, 1).

with the circular movement because of the strong stream of growth and decay (*Tim.* 43). Only when calm returns can the human being regain contact with the circular movements. To Plato (and Pythagoras), music can help restore this calm. In this way music becomes an instrument for the care of the soul (Pelosi 2010, 6). For that reason, Plato is careful in prescribing 'good' music to humankind, involving harmony, rhythm and myth.<sup>77</sup> This 'right kind of music' is not directly connected to the heavens. In Plato's dialogues, apart from the *Timaeus*, there is much to be found on this use of music, especially in his dialogues *The Republic* and *The Laws*. Plato's thought largely reflects the ancient Greek theories of *ēthos* and *paideia*, the presumed power of music to influence human emotions, behaviour and morals and the use of proper music to educate the young. These theories are connected to the Platonic theme of *mimesis*, the ability of music to represent psychic states, which enables interaction with the soul by instilling virtues (Pelosi 2010, 42). *Mimesis* links the topic of educational or therapeutic use of music with the use of music to connect with the divine, as music in the *Timaeus* is the representation of an eternal harmony, restoring rationality (Pelosi 2010, 66). The distinction may not be profound, but nevertheless important: for Plato, there is 'good music' on different levels.

One of the main themes of Platonic philosophy is the immortality of the soul.<sup>78</sup> Building on Pythagorean ideas, Plato presents a theory of recollection on the basis of remembrance of a previous incarnation, and an eschatology with rewards and punishments for the reincarnating soul (Kahn 2001, 51). The Pythagorean way of life, 'following god', thus became the life of Platonic philosophy, aimed at purification of the soul from bodily evils, as a preparation for death and reincarnation, exemplified by the fearless passing of Socrates as described in the *Phaedo* (Kahn 2001, 52). This raises the question whether the music of the soul could be heard through the ears while in the

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<sup>77</sup> *Choreia*, the union of words, music and dance, is positioned by Plato as the preferred avenue to the love of beauty (*Laws* 654/664; Pelosi 2010, 28).

<sup>78</sup> Only in 1513, at the Fifth Lateran Council, the Roman Catholic Church condemned the mortality of the soul as heresy.

body, or could only be heard by the soul after death. The Neoplatonic testimony of Pythagoras' experience seems to indicate that hearing the music of the spheres in the body was reserved for semi-divine mortals, and for the rest of humankind it could only be heard after leaving the body behind.<sup>79</sup> Plato concludes the *Republic* with the 'Myth of Er', which tells how the souls of the deceased come on their post-mortal journey to a place where they could see the *axis mundi* and hear the harmony of the spheres.<sup>80</sup> It is the first near-death experience recorded in Western literature (Kripal 2014, 289).

### *Plato's musical creation*

Retracing my steps, I have shown that Plato was borrowing from the Pythagoreans the musical ratios underlying the order of the *cosmos* for his creation myth. Because of the strong influence of the *Timaeus* dialogue on ancient thought, the concept of heavenly harmony became firmly established and lasted well into the Middle Ages, and beyond. However, the practice of music plays only a minor role in Plato's writings. Plato's ideas on music as therapy may even have come from other sources than Pythagorean, for instance from Damon of Athens, a contemporary expert in the social and political influence of music.<sup>81</sup> Perhaps it is telling that there are numerous sources that describe Pythagoras making music himself, but there is not one source for Plato doing so.<sup>82</sup> In the *Symposium*, Plato's literary characters discuss the nature of *eros* from several angles; the Pythagorean concept of heavenly harmony (*Symposium* 187-188) is not the favourite, and it is overtaken by Diotima's philosophical concept of *eros*, which is presented as the desire

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<sup>79</sup> I will explore this view of cosmic music, dominating the Romantic era, in chapter 7.

<sup>80</sup> 'A place where they could see from above a line of light, straight as a column, extending right through the whole heaven and through the earth, in colour resembling the rainbow, only brighter and pure; another day's journey brought them to the place, and there, in the midst of light, they saw the ends of the chains of heaven let down from above: for this light is the belt of heaven, and holds together the circle of the universe, like the under-girders of a trireme. From these ends is extended the spindle of Necessity, on which all the revolutions turn. .... The spindle turns on the knees of Necessity; and on the upper surface of each circle is a Siren, who goes round with them, hymning a single tone or note. The eight together form a harmony' (Plato *The Republic* X 617; 1937, I, 875).

<sup>81</sup> Portnoy thinks that Damon, teacher and close friend to Pericles, was the main source of Plato's theories of the impact of music on public morality (Portnoy 1954, 11).

<sup>82</sup> Pelosi (2010, 198) says that Plato preferred to listen to traditional ancient Greek music, which was basically accompaniment to poetry.

for immortality and giving birth in beauty (*Symposium* 206). This may be connected to an important watershed between Pythagoreanism and Platonism: In Platonic philosophy, the study of mathematics is only a preparation for dialectic, which has an entirely new object: the intelligible, the invisible and incorporeal realm of Form (Kahn 2001, 55). Whatever importance is attached to the references to music in the dialogues of Plato, it is always subordinated to philosophy as the way to transcend the ever-changing world of sensory perception, of Becoming.<sup>83</sup> This antithesis of Being and Becoming has let to Plato being branded in philosophy as a metaphysical dualist. However, as Sarah Broadie has argued, we should not confuse Platonic dualism with the Cartesian split of mind and matter (Broadie 2001).<sup>84</sup> In Plato's view, the soul is stretched out from the immaterial intellect to the material body, which it animates. The individual soul needs a human body, just as the world soul must have the world as a body; when the human dies, the human body returns to the earth and the human soul return to the stars (Broadie 2001, 296). Soul partakes of both the immaterial and the material, which makes Plato's writings occasionally obscure. As I have shown in discussing the *Chôra* in the *Timaeus*, Plato was also wrestling with a synthesis of duality, a dreamlike reality, beyond Being and Becoming. In this crack in the Platonic cosmology, some later philosophers may have seen an opening for their own interpretation and practices, such as Iamblichean 'theurgy' (Shaw 2012; below, 58). I see another paradox.

Plato contributed as no other thinker in antiquity to the concept of cosmic music by granting the world soul the proportions of the Pythagorean scale. At the conclusion to the *Timaeus* (*Tim.* 92c), Plato declares the world to be a *living* creature, containing all creatures.<sup>85</sup> This vision runs like a thread through Neoplatonic philosophy and is echoed by later thinkers, for instance, Hegel (Schaffer 2010, 67). Plato is metaphysical, but not mechanistic; his universe is *alive*. It connects the totality of the human being, comprising body and soul, through movement to the cosmos. That is completely different from a

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<sup>83</sup> The opposite stance is taken by Joscelyn Godwin in his introduction to *Cosmic Music* (1989, 8-9), where he proposes to position music as 'a higher revelation than all wisdom or philosophy' and a preparation for initiation 'into the fathomless mysteries of man and cosmos'.

<sup>84</sup> René Descartes (1596–1650) differentiated a mechanical body from an immaterial mind, which interact with one another through the pineal gland in the brain.

<sup>85</sup> Dominic O'Meara thinks that Plato has perhaps made 'the first systematic description of the beauty of the world' and 'one of the most influential statements of the theme' (O'Meara 2014, 24).

mechanistic attitude to nature, and therefore this aspect of Plato's thought has received renewed attention in contemporary holistic philosophy and ecology. The essence of Plato's original contribution to the idea of 'star music', I feel, was this element of a *living motion*. It charged the paradoxical image of star music with an (e)motional quality, a mysterious inclusiveness, that sounds strange and unfamiliar to contemporary ears. In my opinion, Plato's cosmology presents the sun, the moon and the planets traversing the starry dome not as dead objects, but as living forces, expressing eternal harmony; they are not silent, but relay a subtle, living music. Perhaps the paradox of 'silent music' is quite central to the Platonic experience of the cosmos, where the vibrations of a transcendental order are living forces, reflected in sound by music.

## 4. The musical cosmos of antiquity

Most important and most perfect of all is music's capacity to yield the proportions of that which men find hardest to understand, the soul, and not only the individual soul, but the soul of the universe as well.  
(Aristides Quintilianus *Perì musikês* I-1; Barker 1989, 400)

This chapter examines the development of the idea of ancient cosmic music after Plato, from Aristotle to Boethius.<sup>86</sup> Such a long period cannot be treated in a short space, and therefore this chapter consists of 'snapshots' to illustrate continuous processes. The Pythagorean-Platonic musical cosmology of the *Timaeus* became one of the main subjects of Plato's school of philosophy, the Academy of Athens, and remained a core subject of the study of ancient philosophy in Athens, Alexandria and Rome for almost a thousand years. In the Platonic Academy, the curriculum was imbued with the study of Pythagorean form and number, and this influence was pervasive, along with Aristotelianism and Stoicism (Joost-Gaugier 2007, 93; Dillon in Huffman 2014, 272-273). Plato made contradictory statements on the audibility of cosmic music.<sup>87</sup> Outside the domain of philosophy, the paradoxical idea of 'star music' slowly entered the general worldview and became a metaphor for a higher form of consciousness. In antiquity, cosmic music gradually transformed from a philosophical theory into a religious, eschatological idea, and perhaps into a ritual. It is possible that ritual music, related to the movements of the stars, was used in antiquity to raise consciousness. It is important to understand this use of music within the framework of the practice of ancient Greek and Roman music. Because I assume not many of my readers are familiar with the sound of ancient music, I will start this chapter with a short sketch of its main characteristics.

### *Greek and Roman music*

Ancient Greek culture was permeated with music, as it was used in all the activities of Greek public life: in schooling, religious ceremony, mundane work, theatrical performance, the singing of poetry, and recreation (West 1992, 1; Mathiesen 1999, 7). It

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<sup>86</sup> For the sources, see Godwin (1993) *The Harmony of the Spheres. A Sourcebook of the Pythagorean Tradition in Music*; Guthrie (1987) *The Pythagorean Sourcebook and Library*; and Strunk (1998) *Source readings in music history*. More on the literature of cosmic music is found in Appendix 1.

<sup>87</sup> In *Republic* X 617, Plato introduces singing sirens on the planetary spheres.

was predominantly vocal, often choral, with some instrumental accompaniment. Greek songs were settings of thoroughly articulate, often highly sophisticated poetic texts, with little verbal repetition; words should be clearly heard (West 1992, 39). As music was a participatory activity permeating communal life, it predominantly had the character of what we now call 'amateur' practice. Although professional Greeks musicians knew musical notation, few scores have come down to us, almost all fragmentary, and no score can be directly related to the subject of cosmic music.<sup>88</sup> It seems obvious that the ancient Greeks had a well-developed *musical* consciousness. Besides, ancient Greek was a musical language; it had a tonal accent of about a fifth, raising the pitch instead of stressing, called *prosodia*, translated in Latin as *ad-cantus*, *accentus* (West 1992, 198). The ancient Greeks knew several stringed instruments, played with a plectrum; of these the *lyra* was made of a tortoise shell. Reed instruments, *auloi*, resembled contemporary oboes and were played in pairs by one player, often to the accompaniment of various percussion instruments.<sup>89</sup> The panpipes belonged to folk music; a sort of trumpet was used for signalling, not for music. The instrument associated with Pythagoras was the monochord, which was more a device for research than for music making, but the Pythagoreans may have used *lyras*, *auloi* and panpipes as well (Barker 2007, 26). The Alexandrian Greeks knew a water organ, the first instrument in history equipped with a keyboard, invented by Ctesibius in the third century BCE (Barker 1984, 4-17; 260-262). The Romans valued its loudness; they introduced the wind bag instead of the water tank and used it in the arena (West 1992, 117; 381). The pneumatic organ was re-introduced to Western Europe from Byzantium in the 8th century, to sustain the Christian liturgy (West 1992, 118). The Romans adopted Greek musical theory and practice but contributed little to the development of music. Toward the end of the first century music flourished throughout the Roman world (Portnoy 1954, 38).

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<sup>88</sup> An overview of the ancient fragments is presented by Martin West in his book *Ancient Greek Music* (West 1992, 277-326). The use of notation in musical practice probably ceased about the fourth century CE (West 1992, 273).

<sup>89</sup> Most of the *auloi* that have been recovered had a cylindrical bore, like the modern clarinet, but they were blown by a double reed, like the modern oboe (West 1992, 85).



### *Sacred music*

Music had an important function in ancient Greek and Roman public religious worship. Many of the religious festivals of the Greek city-states had musical events or musical elements in them: singing processions, choral dances, sacrifices accompanied by ritual hymns (West 1992, 14). Music and dance were designed above all to provide a festive atmosphere; only at the climactic moment of sacrifice did a solemn or reverential mood prevail (ibid., 18). An extreme form of festivity, bordering on ecstasy, was part of the celebrations of Bacchus-Dionysus, typically evoked by music played on *auloi* and percussion instruments (ibid., 181).<sup>90</sup> Of all the fragments of notated ancient music that have come down to us, the only piece that addresses a heavenly luminary is the somewhat austere *Hymn to the Sun* attributed to the Alexandrian poet and composer Mesomedes, written in the second century CE for male voice (West 1992, 304; Mathiesen 1999, 56). It was preserved through the Byzantine manuscript tradition and published by Vincenzo Galilei in 1581.<sup>91</sup>

### *Iamblichus' theurgic music*

If there would have been any music composed (or improvised) to evoke the heavenly harmony in the Pythagorean-Platonic sense in antiquity, I conjecture that it would have been heard in the devotional rituals of 'theurgy'. Iamblichus believed that Egyptian wisdom was the ultimate source of wisdom, and that the Pythagorean way of life was the practice of that wisdom (Shaw 1998, 234). His philosophy took the form of 'theurgy', a word invented in the second century CE to stress the difference with theology: not to talk about the gods, but to act. It originated in Chaldean magic, which comprised evocations of the gods, spells and rituals, and was taken up by Iamblichus, who also borrowed from the pagan mystery religions to create initiatory rituals to access the divine (Dodds 1962, 285). He considered traditional Greek and Roman religious music, from the Bacchic to the

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<sup>90</sup> Ptolemy writes that 'the fact that the gods are (...) summoned by music and song, such as hymns and the music of *auloi* and Egyptian harps, seems to me to indicate that we beseech them to hear our prayers with kindly benevolence' (Ptolemy Harmonics III:7; Godwin 1993, 29).

<sup>91</sup> The *Hymn to the Sun* received a new lease of life as contemporary trance music by the saxophonist Jan Garbarek with the Hilliard Ensemble in 1999.

Olympic, to be insufficient for theurgy, because they were 'human only'.<sup>92</sup> Instead, Iamblichus proposed music allied to the harmonious sounds which proceed from the motions of the universe, the divine stars, of which he writes:

Conformably, therefore, to such like adaptations of melodies to the Gods, the Gods themselves become present. For there is not anything which intercepts; so that whatever has but a casual similitude to, directly participates of, them. A perfect possession, likewise, immediately takes place, and a plenitude of a more excellent essence and power (Iamblichus *On the Mysteries* II-9; translation Thomas Taylor 1821, 133; Godwin 1986, 30).

Here we have a formula for truly creating cosmic music, which fills the human with divine power. One interpretation of this passage is that Iamblichus is alluding to a direct spiritual intervention in theurgy, which goes beyond the sacred symbolism of other pagan rituals and cults, somewhat on the level of the mystery of the Christian Eucharist. For Iamblichus, this powerful effect of music was due to the memory of the divine harmony, which the soul had heard before she 'gave herself to body'. Iamblichus elsewhere describes the sound of the divine harmony as 'whirring' or 'rushing', associated with *Helios* moving through the zodiac (Shaw 1995, 175-176). On this, Crystal Addey comments: 'Iamblichus signifies a profound change of consciousness in the ritual practitioner, whereby through divine illumination they become aware of the 'sounds' of the whole cosmos; this notion matches his description of divination as attaining a divine life and perspective, where all things are seen as 'present' (Addey 2014, 264). Perhaps Iamblichus had an experience of cosmic music, and therefore saw Pythagoras as his sage.

### Macrocosm

Almost a thousand years lie between Pythagoras and Iamblichus. In this timespan, the idea of music connected to the heavens slowly evolved from an esoteric doctrine of the Pythagorean sect to a general accepted feature of the ancient worldview around the Mediterranean. The essential connection was made by Plato when he presented the

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<sup>92</sup> Iamblichus writes: 'That music, therefore, is of a motive nature, and is adapted to excite the affections, and that the melody of pipes produces or heals the disordered passions of the soul, changes the temperaments or dispositions of the body, and by some melodies causes a Bacchic fury, but by others occasions this fury to cease; and, likewise, how the differences of these accord with the several dispositions of the soul, and, that an unstable and variable melody is adapted to ecstasies, such as are the melodies of Olympus, and others of the like kind; all these appear to me to be adduced in a way foreign to enthusiasm. For they are physical and human, and the work of our art; but nothing whatever of a divine nature in them presents itself to the view' (Iamblichus *On the Mysteries* II-9; Godwin 1986, 29).

World Soul as having musical dimensions. In the Platonic creation myth of the *Timaeus* the universe is presented as a macrocosm, a living being with a soul and a body, and the human as a microcosm, mirroring the properties of the macrocosm (Plato *Timaeus* 30). The idea of microcosm-macrocosm is first found in the Presocratic philosophers including Pythagoras, and became a central doctrine of most ancient philosophies. As Rudolf Allers has argued, in its basic form it expresses the idea that a human being contains the four elements of which the universe consists (Plato *Philebus* 29; Allers 1944, 321). This concept was further developed by including the order of the universe, as in the *Timaeus*, a form of 'structural' or 'symbolic' correspondence which, Allers argues, in antiquity gave rise to the systems of teleological cosmology, philosophical anthropology, astrology, and sympathetic magic (Allers 1944, 323). The human being could express this macrocosmic order in life (politics) or art, which Allers has called 'holistic microcosmism'. The correspondence implies that self-knowledge can be a state of mind, which I would call 'cosmic consciousness', a cornerstone of Neoplatonic philosophy (Allers 1944, 331; see below, 114).<sup>93</sup> The idea of the correspondence of macro- and microcosm implies a connection between cosmic music and human consciousness, and is thus central to this thesis. And although the correspondence of macro- and microcosm became a central tenet of Western thought throughout antiquity, the Middle Ages and the Renaissance, this did not lead to the elevation of music as a divine art, it only raised the science of music to the status of a preparation for philosophy (Allers 1944, 377).

### *As above, so below*

The macro-microcosm correspondence has often been summarized by the saying 'as above, so below'. However, within the Greek philosophical schools (including Aristoxenian harmonics) there was an ongoing debate about the starting point of the investigation of nature: from sense perception or from intellectual reflection. Plato and

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<sup>93</sup> Michael Chase cites Pierre Hadot on Stoic cosmic consciousness, which 'raises itself to a higher viewpoint, from which one sees, in a way, the past and future in the present, and it opens up to the infinity and eternity of being' and as 'the consciousness that we are a part of the cosmos, and the consequent dilation of the self throughout the infinity of universal nature'. Chase calls it 'akin to a mystical experience of fusion with the whole, something called "the oceanic feeling"' (Chase 2016, 6).

the Pythagoreans championed rational enquiry, but Aristotle was openly critical of the immaterial aspects of Platonic philosophy.<sup>94</sup> What he brought to philosophy and the science of music was a methodology for establishing ‘facts’, physical phenomena, and explanations. Aristotle never became head of the Platonic Academy but established his own school, the Lyceum. I would classify his approach to reality as ‘materialist’; his main interest was the natural world and his outstanding contribution to science was as a biologist. For the development of the theory of music Aristotle was important as the transmitter of ideas of others, in so far as he represented them faithfully.<sup>95</sup> His own contribution was a flat denial of the reality of cosmic music. Aristotle dryly argued against the audibility of the music of the spheres, explaining that the planets make no sound, because if they did, the noise would be extremely loud and shatter human ears (Aristotle *On The Heavens* II. 9). This idea was based on Plato, who had mentioned *aether* as ‘the most translucent kind of air’ (Plato *Timaeus* 58d). Aristotle added *aether* as a new element to the system of the elements of Ionian philosophy and located it in the celestial regions. For Aristotle, the only noise that could be produced by the planets would be the friction with *aether*, not music.

Aristotle differed from Plato by avoiding the dualism of two substances, animating soul and inert body. He introduced the concept of *pneuma*, a vital heat in all things, at work in reproduction by semen, bearing soul, akin to *aether*, and accounting for the desire for form and for the Good (Skrbina 2005, 50; Lloyd 2007, 141). It is hard to get a clear picture of *pneuma* in Aristotle’s philosophy, but in Stoic philosophy the concept of *pneuma* became the central theme and held a dominant position for nearly four hundred years in the ancient world, eclipsing the cosmologies of Plato and Aristotle. In Stoic philosophy, *pneuma* assumed an all-pervading role as a creative fire (*pyr technikon*), endowed with divine reason, that creates and animates the natural world and holds the entire cosmos together (Skrbina 2005, 55). As David Fideler puts it, ‘for the Stoics, the entire universe was a living organism, synonymous with God, and permeated by a vital, animating spirit, *pneuma*, material, intelligent and dynamic at the same time’ (Fideler 2014, 60).

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<sup>94</sup> As my source, I have used *The Complete Works of Aristotle*, edited by Barnes (1984). On Aristotle and the Pythagoreans, I follow Andrew Barker.

<sup>95</sup> Kingsley signals Aristotle’s ‘shameless’ misinterpretation as a way of silencing his predecessors, including Pythagoras (Kingsley, 3).

As Geoffrey Lloyd has argued, the Greek concept of an all-pervading *pneuma* was an attempt to bridge the dualistic gap between mind and body (Lloyd 2007, 135). In that sense, it is a parallel with the paradox of 'star music'. The meanings of Greek *pneuma* stretched from breeze to breath, spirit, and inspiration. *Pneuma* was regarded as a dynamic internal tension with different modes of unity, *tenor* for the inanimate, *phusis* for plants and *psyche* for animals and humans (Lloyd 2007, 142). The Stoics thus denied a fundamental difference between the animate and inanimate. As Rosemary Wright explains, the concept of *pneuma* was 'a vital ingredient of the Stoic cosmos, showing the sympathy of the parts with the whole by positioning the origin of the human soul in the stars, and that it would return there after its separation from the body at death' (Wright 1995, 121).<sup>96</sup> *Pneuma* found its way into Christian terminology as the Greek word for the Holy Spirit, and was translated into Latin as *Spiritus Sanctus*. It thus stands at the root of the contemporary idea of spirituality as a life oriented towards the Holy Spirit, independent from religious institutions. However, the direct connection between the *anima mundi* and cosmic music with the spiritual was largely lost in the transition from pagan antiquity to the Christian Middle Ages.

### *The ascent to heavenly harmony*

One of the most celebrated ancient sources for a music of the stars in the Latin West is found in the work of the influential Roman philosopher (and politician) Marcus Tullius Cicero (106 -43 BC). In his book *De Republica* he combines Platonic and Stoic cosmology to describe a dream-vision of the stars of the Milky Way, as the narrator Scipio meets his deceased grandfather:

I stood dumbfounded at these sights, and when I recovered my senses I inquired: "What is this great and pleasing sound that fills my ear?" "That," replied my grandfather, "is a concord of tones separated by unequal but nevertheless carefully proportioned intervals, caused by the rapid motions of the spheres themselves. The high and low tones blended together produce different harmonies. Of course such swift motions could not be accomplished in silence and, as nature requires, the spheres at one extreme produce the low tones and at the other extreme the high tones. (...) Gifted men, imitating this harmony on stringed instruments and in singing, have gained for themselves a return to this region, as have those of exceptional abilities who have studied divine matters even in earthly life. The ears of mortals are filled with this sound, but they are

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<sup>96</sup> Lloyd points out that the Greek *pneuma* resembles Chinese *qi* (Lloyd 2007, 143).

unable to hear it. (...) The sound coming from the heavenly spheres revolving at very swift speeds is of course so great that human ears cannot catch it; you might as well try to stare directly at the sun, whose rays are much too strong for your eyes" (Cicero *The Dream of Scipio*, translated by William Harris Stahl; Godwin 1986, 10-11).

This fragment by Cicero survived into the Middle Ages in the fifth century commentary by Macrobius, which became one of the most important sources for the idea of cosmic music in the Latin West. There are important new elements in this presentation of the heavenly harmony, namely the connection with the *studia divina*, meaning the study of philosophy and the afterlife (Godwin 1986, 299 n. 5). Cicero refutes Aristotle's denial of the existence of actual sounding cosmic music by introducing an analogy with looking at the sun, which in this context no doubt refers to the Allegory of the Sun in Plato's *Republic* (*Republic* 507b-509c; Godwin 1986, 300 n. 7). A reflexive re-reading of Macrobius' description of the ascent to heavenly harmony would point to the raising of consciousness, to an 'awakening'.<sup>97</sup>

### Poimandres

The ascent of the soul to a heavenly harmony became an important theme in Greek Alexandrian philosophy and religious syncretism. It is attested by one of the most revered books of ancient mystical speculation, which had a large impact on the Italian Renaissance. In the *Corpus Hermeticum*, a series of treatises by anonymous Greek writers from the first to the third century AD, the ascent of the soul, shedding its earthly qualities, is described by a mythical character called Poimandres. The soul passes in her ascent through the spheres of the Moon, Mercury, Venus, Sun, Mars, Jupiter and Saturn:

And thus it is said that man rises thereafter through the harmonious spheres of the planets. To the first zone he abandons the power of growth and decay; to the second evil schemings, now de-energized; to the third the illusions of desire, de-energized; to the fourth the arrogance of power, de-energized; to the fifth impious daring and presumption; to the sixth the striving for wealth by evil means; and to the seventh zone ensnaring falsehood (Hermes, *Poimandres* section 25; translation by Godwin 1986, 15).

The Hermetic interpretation of the journey through the heavens has acquired a psychological dimension, which in the following paragraph is completed with a pagan

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<sup>97</sup> On awakening, see Taylor (2017) and on the heavenly ascent see Jung (1970, 230-231).

religious goal. Purified, the soul enters the eighth sphere of the fixed stars of the Zodiac, where she hears the heavenly harmony. Above, the soul enters the domain of angels or lesser gods.

And then, stripped of that which was given its energy by the Harmony and clothed in his proper power, he enters into the Eighth Sphere. Here he sings with the beings that are there, hymning the Father, and rejoicing at his coming. And now that he is made like his companions, he can also hear the Powers above the Eight Sphere beautifully singing their own hymns to God. And then, in order, they ascend to the Father, surrendering themselves to the Powers; and, becoming Powers in their turn they are reborn in God. This is the happy end of those who have gained Gnosis: to become one with God (Hermes, *Poimandres* section 26; translation by Godwin 1986, 15).

This text was brought to Florence in 1460 and translated into Latin by Marsilio Ficino in 1471 (Gilles Quispel in Hermes 1999, 9).<sup>98</sup> It had a strong impact on the development of Renaissance thought and culture, partly because Ficino and his contemporaries thought that Hermes was an ancient Egyptian sage, older than Plato and Moses, and that he was the underlying inspiration of all philosophy and religion after him (Hermes 1999, 9). When in 1614 the *Corpus Hermeticum* was dated to the early centuries AD the text lost its general fascination, but it lived on as an inspiration in secret societies such as the Freemasons and the Rosicrucians (Hermes 1999, 9). In the text, there are strong resonances of the practices of the ancient mystery religions, many of which offered initiation in the city of Alexandria into the secrets of the afterlife. The Hermetic text shows how in antiquity cosmic music had gradually transformed from a philosophical theory into a religious, eschatological idea, which in turn had a strong impact on Renaissance thought and later esoteric traditions.

### *The revival of Pythagoreanism*

The movement that Pythagoras founded must have evoked opposition in the fourth century BCE, as there are several reports of violence against the Pythagoreans in southern Italy. However, authors have argued that Pythagoreanism didn't die out but its members just moved to other cities and continued to lead an 'underground' existence in smaller circles, or moved to Greece (Kahn 2001, 7). Already in the early Platonic Academy the

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<sup>98</sup> On Ficino and cosmic music, see chapter 6.

myth of Pythagoras as the archetypal Platonic philosopher was born and contributed to the inclusion of Pythagorean philosophy in the Academic curriculum (Kahn 2001, 65). Pythagoreanism probably witnessed a revival as a community in Rome at the time of Cicero (Kingsley 1995, 317-334). In this period, several philosophical works by pseudonymous writers created the illusion that Plato was a follower of Pythagoras, including a treatise by a pseudo *Timaeus of Locris*, the fictional character of Plato's dialogue (Kahn 2001, 79). Some philosophers from the first to the third century BC consequently attributed Plato's philosophy to Pythagoras. These Neo-Pythagorean philosophers emphasized the role of number in cosmology (Kahn 2001, 94). As John Dillon writes:

Neopythagoreans thus show devotion to what they chose to regard as the basic principles of the Pythagorean philosophical system, the One and the Indefinite Dyad, although these principles are, in fact, Platonic. Neopythagoreans were Platonists and not themselves directly affiliated to anything that could be described as a Pythagorean "school," although a few of them may also have followed to varying extents the Pythagorean way of life, or *bios* (John Dillon in Huffman 2014, 250).

### *Nicomachus*

The best known Neo-Pythagorean philosopher was Nicomachus of Gerasa (beginning of the second century CE), author of a handbook of arithmetic and an *Enchiridion* on musical harmonics, which was the main source of Boethius' influential treatise. Nicomachus' elementary introduction to harmonics presents the traditional assignment of tones to the planets according to astronomical distance, from the highest note for Saturn to the lowest note for the Moon (Nicomachus *Enchiridion* III-10).<sup>99</sup> Barker argues that there is little evidence to show that Nicomachus was seriously concerned with the tunings of musical practice (Barker 2007, 446). The scales that Nicomachus treats are all directly derived from Plato's *Timaeus* scale and thus 'metaphysically pure' (Barker 1989, 247). As Godwin argues, Nicomachus is embracing everything in the universal matrix of the musical *Tetraktys* (6:8:9:12) and the diatonic scale that fills it out (Godwin 1993, 9). It is this integration of Platonic and Pythagorean 'idealist' musical cosmology that inspired the

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<sup>99</sup> Some authors, notably Boethius, connect planets to tones according to velocity; Saturn, taking 30 years to go around the Zodiac, then has the lowest note (Godwin 1987, 118-120).



Neoplatonic philosophers to grant a special position to music and in turn influenced medieval and Renaissance cosmology.

### *Aristides Quintilianus*

As was often the case in the later days of the Roman Empire, philosophers collected and organized the existing knowledge of Greek thought for posterity rather than developing new insights. In this tradition stands Aristides Quintilianus, who probably lived in the third century CE. He aimed at putting everything relevant to the study of music together in one single treatise, *Perì musikês*, embracing both the Aristoxenian and Pythagorean approaches. It has survived through the Byzantine and Arab traditions and was first published in 1652. Although his treatise does display detailed information on the connections between planets and tones, it presents the traditional ancient picture of the music of the spheres as a single chord or arpeggio, which can easily be constructed as the projection on the heavens of the tuning of a Greek lyre. As musical systems change from age to age, so will the planetary scale change and lose its character as an objective reality (Godwin 1987, 114). The point is, most ancient philosophers started from the *Timaeus* scale to construct a music of the spheres, which would invariably result (if they tried) in a rather limited form of music. For the simplest expression of cosmic music, for instance medieval plainchant or contemporary mantra-singing, just one scale will do. To produce a more enchanting or inspiring effect, the somewhat sketchy musical cosmology of the *Timaeus* needed elaboration with more connections and parameters. This was provided in antiquity by the rise of the systems of astronomy and astrology, and its towering figure was Ptolemy.

### *Ptolemy*

Claudius Ptolemaeus was one of the finest scientist of the ancient world, writing in Alexandria in the second century CE about mathematics, astronomy (*Almagest*), astrology (*Tetrabiblos*), geography and harmonics. Ptolemy's *Almagest* synthesized the knowledge of Babylonian, Egyptian, and Greek observers over centuries and presented a theoretical model that predicted the motion of the planets with an accuracy exceeding anything that had come before, and which stood unchallenged for a millennium. Ptolemy's *Harmonics* synthesized musical learning on a scale comparable to his astronomical work. Mathiesen describes it as 'the full flowering of the historical,

antiquarian, and scientific interest that were so typical' of the second century CE (Mathiesen 1999, 494). The *Harmonics* re-entered the stream of Western music theory from the 16<sup>th</sup> century (Pesic 2014, 19).

Ptolemy should be considered a thinker in the Pythagorean tradition, deriving the structure of music from the mathematical order of the universe understood by the mind, not from observation (Barker 1989, 270). 'Though it is through reason that the form of harmonic structures is discerned, its findings are subject to the test of perception' is how Barker summarizes Ptolemy's position (Barker 1989, 271). With 'form' Ptolemy follows Plato's theory of forms. Consequently, Ptolemy studied the philosophy of music *and* the instrumental practice of his own day (Barker 2007, 444). Starting from Pythagorean harmonics, based on superparticular ratios, he deduced the theoretical possibility of the whole-tone scale in equal temperament (West 1992, 240; Godwin 1987, 141).

When it comes to cosmic music, Ptolemy takes up a position that I have made one of the core arguments of this thesis. Ptolemy argues – supposedly for the first time in history explicitly – that the mathematical relations underlying the structures of audible music also constitute the Platonic 'forms' that are the essence and cause of perfection in the human soul and in the movements and configurations of the stars (Ptolemy *Harmonics* III-4; Barker 1989, 274). As Barker puts it, 'in different material matrixes, the same formal relations create musical beauty, excellences of character and intellect, and the perfect celestial geometry of the skies' (Barker 1989, 274). In a paradoxical coincidence of opposites, cosmos and soul resonate with music.

### **Tone Zodiac**

Ptolemy struggled to forge a direct link between the musical and astrological systems of his day. In Hellenistic times the zodiac was for the first time pictured as a circle (Campion

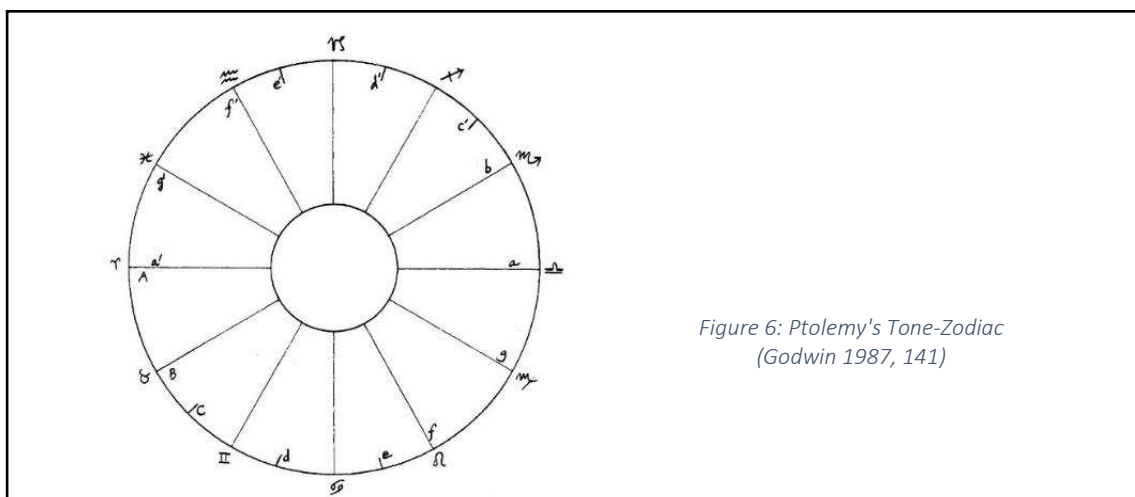


Figure 6: Ptolemy's Tone-Zodiac  
(Godwin 1987, 141)

2008, 180-181, ill. 7). The horoscopic circle is a map of the sky relating to what is coming into being at that moment, and a tool to interpret the position of the signs of the zodiac and the planets. In Ptolemy, we find the first reference to a circular 'tone-zodiac', which is a circle connecting a scale to the signs of the Zodiac (figure 6). He lays out a two-octave scale of twelve whole-tone steps on a zodiac circle, noting that the rotating movements of the stars are all circular and regular and similar to the movements within the tone-system (Mathiesen 199, 484). In this form of the tone-zodiac, the octave (2:1) comes opposite in the circle, and so cuts it in two (1:2), which he considers 'the greatest mystery of all' (Ptolemy *Harmonics* III-8; Godwin 1993, 31). Ptolemy says that 'for this reason the effect of the planets is at its strongest in opposition, when they occupy diametrically opposed positions in the zodiac, and a similar relationship obtains among tones which are an octave apart from one another' (Ptolemy *Harmonics* III-8; Godwin 1993, 31).

Ptolemy based his tone-zodiac on a two-octave scale; to a modern sense of consonance it seems strange to portray astrological opposition (tension) by the octave and conjunction (release) by the double octave (Mathiesen 1999, 485).<sup>100</sup> Modern tone-zodiacs correlate the twelve signs of the Zodiac with the twelve notes of the equally tempered chromatic scale and sometimes to the twelve keys of the circle of fifths (Godwin 1987, 142). Since the different keys have lost their distinct character in equal temperament, we have here another example of the difficulty of translating astrological concepts like the signs of the zodiac, the houses or the aspects directly into notes or scales. Interestingly, Ptolemy also describes connections between musical modulation (change of mode/genera) and the rising and falling motions of planets (Ptolemy *Harmonics* III-11; Pesic 2014, 19). This comparison, based on the tropics, connects the seven Greek modes with the twelve star signs (figure 7).<sup>101</sup>

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<sup>100</sup> More than a thousand years later, conform the musical idiom of his times, Marsilio Ficino connected the astrological opposition experientially with the interval of the major seventh, instead of Ptolemy's more theoretical octave.

<sup>101</sup> Cancer - Mixolydian; Gemini & Leo - Lydian; Taurus & Virgo - Phrygian; Aries & Libra - Dorian; Pisces & Scorpio - Hypolydian; Aquarius & Sagittarius - Hypophrygian; Capricorn - Hypodorian.

Finally, Ptolemy presents another tone-zodiac of two octaves showing the phases of the moon. The musical scale is the same as in figure 6, and the same objections apply. There is no evidence that these tone-zodiacs were ever used to produce sounding music, nor is there evidence of Ptolemy making music himself.<sup>102</sup>

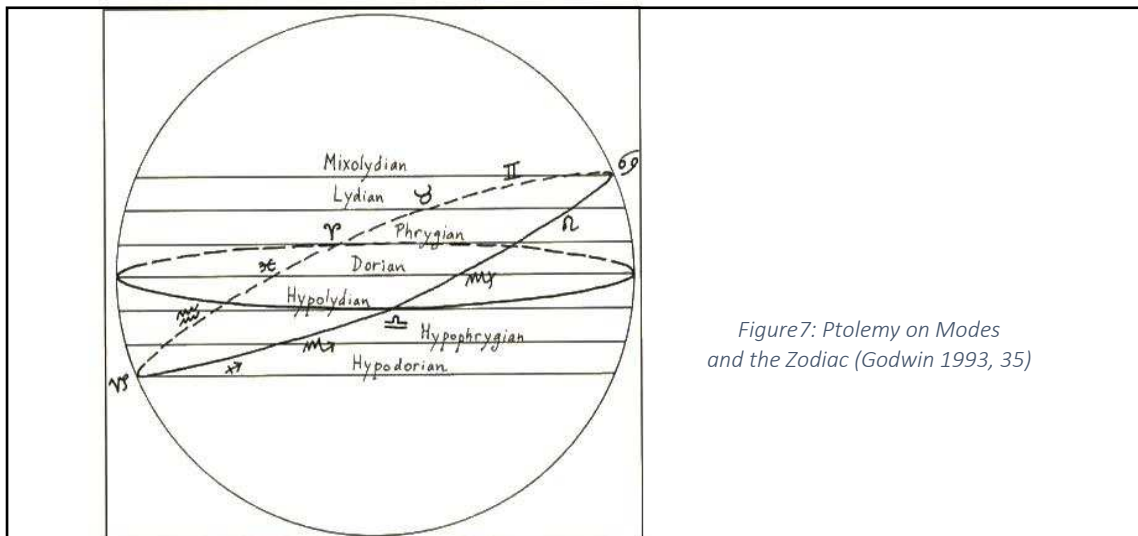


Figure 7: Ptolemy on Modes and the Zodiac (Godwin 1993, 35)

### Plotinus

The Neoplatonic philosopher Plotinus (third century CE), arguably the greatest thinker of antiquity since Plato, is of no direct concern of this research, as his life and works do not connect to a practice of music. However, his profound ideas had a lasting effect on the history of Western thought. When alluding to the idea of cosmic harmony I find his writing rather allegorical, but when he is unfolding his holistic vision of the universe, it has a genuine, authentic quality that doubtless reflects a mystical, holistic experience. For Plotinus, all reality was essentially spiritual in nature. The source of the universe was unlimited, ineffable, and of infinite power, overflowing like a fountain, giving birth to *Nous*, which in turns gives birth to the World soul, which gives birth to Nature, as links in an unbroken chain (Fideler 2014, 66). Plotinus offers the most detailed account of the World Soul and its place in the cosmic structure to be found in any ancient philosopher (ibid., 65). Plotinus is explicit in his holistic vision:

The secret is: firstly, that this All is one universally comprehensive living being, encircling all the living beings within it, and having a soul, one soul, which extends

<sup>102</sup> As Mathiesen notes, Ptolemy was not unique in detecting musical designs in the cosmos, as this Neoplatonic cosmology is also found in Aristides Quintilianus, Plutarch and Theon of Smyrna (Mathiesen 1999, 487).

to all its members in the degree of participant membership held by each; secondly, that every separate thing is an integral part of this All by belonging to the total material fabric (...). The rise of all these forms of being, their destruction, and their modification, whether to their loss or gain, all goes to the fulfilment of the natural unhindered life of that one living being (Plotinus *Enneads* 4.4.32; MacKenna 1956, 315-316).

Plotinus links this holistic vision with consciousness:

Thus this universe of ours is a wonder of power and wisdom, everything by a noiseless road coming to pass according to a law which none may elude—which the base man never conceives though it is leading him, all unknowingly, to that place in the All where his lot must be cast—which the just man knows, and, knowing, sets out to the place he must, understanding, even as he begins the journey, where he is to be housed at the end, and having the good hope that he will be with gods (Plotinus *Enneads* 4.4.45; MacKenna 1956, 327).

In a nutshell, these quotes present the grand vision of antiquity on the cosmos and the human situation. It was left to Iamblichus to give musical hands and feet to this vision.

### *Theurgy*

In Hellenistic times the attitude of philosophers to reality changed, alongside a rising popular interest in religion, magic, initiation, astrology and individual salvation (Dodds 1962, 248-249). The concept of a harmonious cosmos took a magical turn; it suggested a rich network of sympathies between macro- and microcosm, which might be exploited by human operations (Tomlinson 1993, 87). At the end of the Neo-Pythagorean revival we find Iamblichus looking beyond Plato and Plotinus for a predecessor who exemplified his active life, turning Pythagoras into a sage of divine proportions. As Dominic J. O'Meara has argued, Iamblichus' ambition to revive Pythagoreanism as a way of a philosophical life successfully established a philosophical and theological doctrine that pretended to have far greater antiquity and authority than Plato, both in later Neoplatonism and in the revival of the Italian Renaissance (O'Meara in Huffman 2014, 415; O'Meara 1989, 215). Iamblichus realised this by reformulating Platonism as the revelation of truth to the ancient Greeks by Pythagoras as a divine soul (O'Meara 1989, 213). Iamblichus' work *On Pythagoreanism* invites the reader to philosophy through the figure of Pythagoras and leads him up through the successive stages of Pythagorean philosophy, the final stage being reached in a sequel no longer extant, a Pythagorean theology *On God* (O'Meara 1989, 212, 215). It may have included music, which in the words of Aristides Quintilianus was capable of yielding 'the proportions of that which men find hardest to understand,

the soul, and not only the individual soul, but the soul of the universe as well' (Barker 1989, 400). Iamblichus' concept of cosmic music as a direct encounter with the divine, as quoted above in this chapter, fits in with this development.

### Boethius

The Roman Neoplatonic philosopher Anicius Manlius Severinus Boethius (480-524 CE) stands as a Janus figure on the threshold between antiquity and the Middle Ages. He was thoroughly familiar with the whole range of ancient philosophy, which he sought to translate from the Greek into Latin. Besides, Boethius tried to bring the different systems into a grand synthesis: Plato and Aristotle, Christian and pagan. This attitude, the ambition to construct a 'theory of everything', would become the intellectual characteristic of the scholastic age, lasting to this day in some quarters. Boethius summed up the acquired knowledge on the ancient Greek philosophy of music of the previous thousand years. Through Boethius' Latin reformulation, a version of Greek mathematical harmonic theory passed into the medieval tradition. In his day, Greek music had disappeared, and Boethius' harmonics were strictly theoretical. Boethius was the first to articulate a threefold division of music, and was accepted on his authority for at least the next thousand years.<sup>103</sup> He distinguishes three forms of harmony: *musica mundana*, *musica humana* and *musica instrumentalis* (Boethius *De institutione musica* I.2; 1989, 9-10). The first kind, cosmic music, Boethius describes as deriving from the harmonious movements of the heavenly bodies, the balance of the four elements and the cyclical succession of the seasons. On the second kind, human music, he says that whoever penetrates into his own self perceives human music, uniting reason and body. Instrumental (or vocal) music is regarded as displaying the mathematical proportions of the sacred order of the cosmos. All Boethius' writings were greatly revered in the Middle Ages, especially his *Consolations of Philosophy*, and were read widely, not only by specialists in philosophy of music (Barker 2007, 437). The *Consolations* are written as a *prosimetrum* by Boethius, in prison awaiting execution. It became one of the most popular books in the Middle Ages, presenting a Stoic-Platonic cosmology. Boethius' cosmic music, ruling the harmony of the heavens, seasons and human destiny, found its

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<sup>103</sup> Andrew Hicks has convincingly argued that the little evidence there is, suggest that this division is indeed of Boethius' own making (Huffman 2014, 423).

most exalted expression in the poetry of the *Consolations of Philosophy*; here *concordia* or *amor* rules the heavens and all creation in the name of God, who is the source and ultimate goal of life (Boethius 1969, IVM6, 141-142). It was the silent swansong of ancient cosmic music, and the inspiration for medieval heavenly harmony.



## 5. Medieval heavenly harmony

In you the Holy Spirit makes symphony,  
for you are joined to the angelic choirs  
and adorned in the Son of God.  
(Hildegard of Bingen *Symphonia* 49, 5; 1988, 21)

This chapter considers the heavenly harmony of the Middle Ages in Western Europe.<sup>104</sup> The idea that the heavens are filled with music, which cannot be perceived by mortals, was part of a general medieval worldview.<sup>105</sup> The medieval version of cosmic music incorporated the inherited Pythagorean-Platonic concept within the framework of a Christian cosmology. In many respects, there was no break with antiquity, but a continuation of culture.<sup>106</sup> With the expansion of the Roman Empire in the first centuries CE, the ancient culture of the Mediterranean had spread slowly in a northwestern direction. From the twelfth century on, the centre of cultural and musical renewal began to shift from the Mediterranean to Northern Europe.

After the breakup of the Roman Empire in the sixth century CE, contact between the Greek-Byzantine and Latin worlds was reduced to a minimum. The Greek language was largely forgotten in the West.<sup>107</sup> In the Christian Byzantine Empire, pagan philosophy was of little concern to the clergy (Mathiesen 1999, 609; 641). Knowledge of the ancient philosophy of music just survived through the Byzantine manuscript tradition, and later also through the Arab world. It began to find its way into northern Europe, in Latin translations, from the tenth century onwards. The practice of music in the Byzantine world and the West went separate ways, and by the eleventh century Western and Eastern Church music shared only the general likeness of plainchant (Tillyard 1937, 202).

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<sup>104</sup> In this chapter, I focus on the Western world, leaving aside the Byzantine, Arab and Jewish traditions.

<sup>105</sup> See Joost-Gaugier, Christiane (2007) *Measuring Heaven: Pythagoras and His Influence on Thought and Art in Antiquity and the Middle Age*; Godwin, Joscelyn (1993) *The Harmony of the Spheres*; Mathiesen, T.J. (1999) *Apollo's Lyre*; Spitzer, Leo (1944/1945) 'Classical and Christian Ideas of World Harmony'; Kathi Meyer-Baer (1970) *Music of the Spheres and the Dance of Death. Studies in Musical Iconology*; and Oliver Strunk (1998) *Source readings in music history*.

<sup>106</sup> In terms of cosmology, antiquity and the Middle Ages may be taken together as distinct from modernity. See C.S. Lewis (1964) *The Discarded Image*.

<sup>107</sup> For example, Saint Augustine of Hippo based his Latin work *De Musica* only on translations of work by the Neoplatonist Porphyrius, because he knew little or no Greek (Mathiesen 1999, 622).



### Theophany

It is important to consider the difference between the concept of cosmic music as conceived by the ancient pagan philosophers, who provided the source of the idea, and their Christian heirs. Although heaven holds an important position in Christian cosmology, it is dominated by a transcendent Christ as the *salvator mundi*, and is thus very different from the pagan 'stardome', worshipped for its visible, divine heavenly bodies. The Christian heaven was primarily the domain of immaterial angels and saints, whereas the pagan heaven was the domain of the deified planets and mythical creatures, present in the stars of the Zodiac. As Jean Seznec has demonstrated, the pagan gods survived in the Middle Ages through astrology and the arts (Seznec 1953). Pointing out that it was far more than a dispute about whether sun, moon and stars were to be worshipped, Arthur Hilary Armstrong has articulated the ontological difference between Christian and pagan concepts of heaven, and thus also for cosmic music. He argues that the essential difference between the pagan and Christian religious attitudes of antiquity can be found in the pagan reverence for the cosmos as a *theophany*, as opposed to the *anthropocentrism* of the early church (Armstrong 1973). Whenever Plato was studied in the Middle Ages, the concept of the cosmos as a theophany enjoyed a revival. I think Armstrong's theory is an excellent tool for reflexive re-reading of the medieval idea of cosmic music.<sup>108</sup> In the Middle Ages, heavenly music was not a paradoxical unity of the eternal and the temporal in creation; it was a glimpse of the eternal afterlife, where the soul meets the creator. In that sense, it was a different paradox. I have already shown how this eschatological form of cosmic music developed in Late Antiquity. In the Middle Ages, it became the only form of cosmic music, and it lived on in some form until very recent times. However, the antithesis Christian versus pagan religious attitude pales into insignificance compared to the post-Enlightenment antithesis of idealism versus

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<sup>108</sup> However, it is a simplification. The Middle Ages knew theophany as well, for instance in the words of Saint Francis of Assisi (1181-1226), who saw the presence of God in all nature - from flowers to fields of corn, vineyards, stones, beauteous meadows, tinkling brooks, sprouting gardens - and thus treated everything with the greatest reverence (Skrbina 2005, 61; 223). Its contemporary relevance was recently attested by Pope Francis, who quoted in his environmental encyclical *Laudato Si'* (Vatican 2015) the *Canticum of the Sun* by St. Francis.

materialism. In a contemporary materialist worldview, there is no interest in the religious or the sacred whatsoever. Compared with the contemporary materialist worldview, medieval Christian cosmic music and ancient pagan cosmic music share a focus on the sacred, albeit of a different quality. Besides, a reconciliation of Christian doctrine and Pythagorean concepts on the mathematical proportions of creation was facilitated by several allusions to cosmic music in the Bible (Andrew Hicks in Huffman 2014, 419).<sup>109</sup>

### *The Renaissance of the twelfth century*

The idea of the music of the spheres survived in the Latin manuscript tradition through the works of the late antique writers Calcidius, Macrobius, Boethius and Martianus Capella.<sup>110</sup> In the flowering of learning and culture of what has been called ‘the Renaissance of the twelfth century’, most of all at the cathedral school of Chartres, an integration of Pythagorean-Platonic theories and Christian doctrine was attempted. The philosophers of the cathedral school of Chartres studied the first part of the *Timaeus* and identified the World Soul with the Christian Holy Spirit. This enabled them to bridge the gap between the realms of matter and spirit, encouraging scientific research into nature and art, expressing natural beauty (Fideler 2014, 97). Music was regarded as a representation of the Holy Spirit, binding the natural world, God and human beings into a cosmic whole (Boyce-Tillman 2000, 75). As Marie-Dominique Chenu has written:

The masters of the twelfth century, resting their case on the interpretation given the *Timaeus* and the pseudo-Dionysian hierarchy at Chartres, proclaimed that the possibility of participating in the divine reality belonged expressly to matter as well as to everything above it; that the immense unity of all things was knotted up together in man who stands at the paradoxical borderline of matter and spirit. The human ‘compositum’, men would say later on, solemnizes man’s union with universe. It is even for this purpose that he was created (Chenu 1968, 25).

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<sup>109</sup> Jamie James cites Clement of Alexandria (late second century CE), portraying the *Logos* as *musica mundana*, Jesus ‘as a song’ or *musica humana*, and the human body as a musical instrument (James 1993, 70). I am not convinced that Clement’s writings reflect a generally held conviction among the Church Fathers. The most cited Bible sources are Psalm 19:1; Job 38:37;

<sup>110</sup> A very isolated case of the integration of Christian and pagan musical cosmologies was John Scotus Erigena in the ninth century. See Godwin 1993, 104.

This vision of the human situation, at the *paradoxical* borderline of matter and spirit, found its expression in a remarkable Latin poem of the twelfth century, the *Cosmographia*, by Bernardus Silvestris of Tours (Bernardus 1978). It relates in a *prosimetrum* the creation of the cosmos and of a *homo novus* as a microcosm, based on the *Timaeus*, the Hermetic *Asclepius* and many other ancient authors (Peter Dronke in Bernardus 1978, 17). Although completely removed from Christian doctrine, the work was read out to Pope Eugenius III, the same pope who gave his approval to document the visions of Hildegard of Bingen as revelations from the Holy Spirit (Dronke in Bernardus 1978, 2).<sup>111</sup> Bernardus' name Silvestris is derived from the heroine of his poem, *Silva*, a Latin translation of the Greek *hyle* (ὕλη), which refers to the *Chôra* of the *Timaeus* (Dronke in Bernardus 1978, 29). The chaotic *Silva* longs for the beauty and harmony of music. This poetic pagan vision illustrates the relevance of ancient philosophy to the twelfth century as a source of new ideas on the nature of human self-consciousness, symbolized by the creation of the *homo novus*.

### Plainchant

The music of the early church, male vocal monophony, was of Hellenic, Hebraic and Syrian origin, but excluded the use of instruments and chromatic ornamentation (Portnoy 1954, 46-47; Tillyard 1937, 201). Instruments were excluded from the synagogue from 72 CE, but in full use in the pagan cults. The modal system of the music of the early church must be regarded as a simplification of ancient Greek theory.<sup>112</sup> When the Western church organised itself, Pope Gregory the Great set out to standardize the music of the liturgy in the sixth century, and this order was spread by the sword by Charlemagne in the eighth century (Tillyard 1937, 201). In this way, a Mediterranean style of music spread to the far corners of Western Europe, detached from local folk music. As the sung version of the Roman Catholic liturgy, plainchant was primarily words sustained by pitch, rather than music in a modern sense; there is no pulse, no meter. Godwin argues that medieval

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<sup>111</sup> Hildegard may have read the *Cosmographia*, but scholars disagree on the evidence. Of the numerous authors who have been influenced by Bernardus Silvestris I would like to mention Alan de Lille, Jean de Meung, Boccaccio and Chaucer (Dronke in Bernardus 1978, 12-15).

<sup>112</sup> Vetter notes a decisive influence on the formation of Western modality around 800 CE, besides Byzantine theory, of the ancient connection between the *modi* and the planets of the seven-day week (Vetter 2000).

plainchant was therapeutic for the singing monks, but could also produce higher states of consciousness in the singer or listener, ‘for the seven notes of the modes can be heard as the notes of the planets, the wandering of the melody through them felt as a journey around the spheres’ (Godwin 1987, 54). Plainchant has a natural religious quality based on the simplicity of its melodic lines, the congregational way of performance, the fixed repertoire and the reliance on sacred texts. In later ages, plainchant only just survived in the monastic world, but enjoyed a popular resurgence during the new-age and world-music movements of the 1980s and 1990s. It also inspired contemporary classical composers like Arvo Pärt (b. 1935). I feel plainchant is most of all an expression of Christian charity, the shared compassion of believers. Although it celebrates the creator rather than creation, it is very close in spirit to the idea of ancient cosmic music as having a shared transcendent meaning present in the moment of performance.

### *Hildegard of Bingen*

The music of abbess and mystic Hildegard of Bingen (1098-1179) is often considered to be medieval cosmic music. Hildegard experienced visions from a very young age, and later in life wrote them down. In one of her visions, Hildegard displays an important characteristic of twelfth-century resurgence of ancient philosophy, namely the idea of the correspondence of macrocosm and microcosm, in the form of a wheel or disk from the heart, connecting the human to the universe (Flanagan 1989, 140). Some titles and texts of Hildegard’s music (for instance the *Symphonia armoniae celestium revelationum*) refer explicitly to cosmic music. Only recently has Hildegard’s importance as a composer been recognized (White 1998, 8). In the twelfth century, a composer would not consider himself or herself as such; musical inspiration came from God and was not attributed to the individual. Hildegard wrote music and words for over seventy liturgical songs and a musical play, all in the service of monastic life. Her music consists of a single melodic line without harmony or polyphony, not having a regular rhythm in the contemporary sense.<sup>113</sup> As June Boyce-Tillman argues, Hildegard’s theory of music was inextricably

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<sup>113</sup> The rhythmic character of medieval music was based on metrical or poetic feet, which originated with the ancient Greeks as a link between poetry, rhetoric and music (White 1998, 9).

bound up with the cosmic order (Boyce-Tillman 1998, 32).<sup>114</sup> Her soaring melodies, I feel, express timelessness, allowing a sense of stillness to arise.

### Polyphony

In the eleventh century, Guido of Arezzo introduced staff-notation and solmisation to overcome the difficulties that the monks had in remembering the plainchant melodies. This invention opened possibilities for the composition of more complex music, polyphony, the rise of the trained, paid musician and virtuosity (Crosby 1997, 147-148; James 1993, 83). Guido, and most of the authors of medieval musical manuals, did not think that the Pythagorean idea of the harmony of the spheres had much relevance for the practice of music making (Vetter 2000, 94). The introduction of musical notation was an immediate success, and it facilitated the closing of the gap between the voice and mechanical instruments. Already in the writings of Saint Augustine the *jubilus* of the Alleluia was conceived as an expression of joy that transcended language, a “purely musical” expression, paving the way for the development of instrumental music (Bonds 2014, 45). The growth of polyphony was also inextricably linked to the introduction of the organ (James 1993, 80).

Plainchant was superseded in the late twelfth century in Western Europe by the Gothic art of the *organum* and the *motet*, vertical musical constructions leading towards polyphony. Perhaps these remarkable changes were connected to the Great Schism of the Western and Eastern churches in 1054; the West went on ahead, where the East preserved the past (Mathiesen 1999, 644). As Alfred Crosby has argued, polyphony marked the introduction of quantification of music by the use of the notated rest with a definite length; silence had become part of musical time (Crosby 1997, 151). Music then quickly progressed into new forms (the so-called *ars nova*). ‘Faith in absolute time’, writes Crosby, ‘which musicians who invented Western mensural notation were among the first to think about seriously, which thereafter a growing proportion of their fellows received as a self-apparent truth - such a faith altered perception of reality and promoted a

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<sup>114</sup> Boyce-Tillman’s source, composer Pozzi Escot, sees Hildegard’s thought displaying connectivity, an essence of oneness, the totality of a “metapattern”, all deriving from wisdom of God. She calls Hildegard ‘contemporary to us in thought-ideas are imminent and the metapattern (a term coined by Bateson) is a dance of interacting parts’ (Pozzi Escot 1993, 37). See also June Boyce-Tillman (2000) *Constructing Musical Healing: The Wounds that Heal*. London UK: Jessica Kingsley Publishers.

reordering of the ways to understand it' (Crosby 1997, 157). June Boyce-Tillman has called the development of notation 'a process of separating music from the context of its creation' (Boyce-Tillman 2016, 51). The introduction of notation and polyphony was perhaps the most important development in Western music to this day. It attempted to codify sound, and to fix beauty; it facilitated organisation and control. A reflexive re-reading may connect this development in music to the beginnings of a rational orientation of consciousness. I have personally struggled for years to develop the ability to an inner hearing of music when reading an unknown notated score, and in my experience few musicians have developed that ability to approach music as an inner world, independent of an instrumental practice. What a difference with writing words! Notation helped me to rise above the flow of music, which facilitated more complexity but hindered musical intuition.

In the Byzantine Empire, no comparable development of polyphony took place (Mathiesen 1999, 668). After the fall of Constantinople in 1453 Byzantine music acquired a 'thoroughly oriental quality' (Tillyard 1937, 202). However, the Byzantine Empire contributed decisively to the development of cosmic music through the preservation of the sources of ancient Greek ideas. After the thirteenth century, the reintroduction of the works of Aristotle and his criticism of the Pythagorean ideas dominated Western scholastic thought, and the idea of the music of the spheres largely disappeared until its revival by Marsilio Ficino (Hicks in Huffman 2014, 434).

## 6. The *musica mundana* of the Italian Renaissance

Since the heavens have been constructed according to a harmonic plan and move harmonically and bring everything about by harmonic sounds and motions, it is logical that through harmony alone not only human beings but all things below are prepared to receive, according to their abilities, celestial things. (Marsilio Ficino *Liber de Vita* 3.XXII; Voss 2006, 158)

The Italian Renaissance is the age in which the culture of antiquity flowered in thought and the arts. The most important writer of the Renaissance for this research is the philosopher Marsilio Ficino (1433-1499), because he translated many sources of ancient philosophy from Greek into Latin and practised a form of cosmic music, based on ancient thought.<sup>115</sup> The rediscovery of many new sources of Greek philosophy around the fall of Byzantium in 1453 contributed decisively to a transformation of cosmology and the arts. If we compare the attention paid to the first part of the *Timaeus* in Chartres in the twelfth century to the rising of the morning star, then the translation and dissemination of Plato's *complete* works in the Italian Renaissance may be imagined as the full blast of the rising sun. However, despite the use of the term 'Renaissance', implying a *re*-birth of classical culture, the fifteenth century was really an age of 'genuinely new thinking', especially outside Italy (James 1993, 98). As such, the introduction of Greek philosophy was the start of several *new* developments. In this chapter, I will first survey some of these developments before focussing on Marsilio Ficino.

### *The new man*

The new attitude of the Renaissance man of letters is often called 'humanism' and associated with the dignity of the human being. The humanist agenda was the liberation of thought and style from scholastic shackles, by imitating classical authors. The new ideal is easily recognized in Renaissance visual arts, which glorifies the beauty of the human

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<sup>115</sup> See S.K. Heninger (1974) *Touches of Sweet Harmony*; Gary Tomlinson (1993) *Music in Renaissance Magic*; Angela Voss (1998) 'The Music of the Spheres – Ficino and Renaissance harmonia'; Christiane Joost-Gaugier (2009) *Pythagoras and Renaissance Europe*; Joscelyn Godwin (1993) *The Harmony of the Spheres. A Sourcebook of the Pythagorean Tradition in Music*; and Oliver Strunk (1998) *Source readings in music history*.

body, often disguised as some ancient pagan mythical subject, and proudly expresses the whole range of human emotion. A craze for ancient artefacts contributed to a new style in sculpture, painting, design and architecture. In music, the impact of ancient ideas was far less radical. Contrary to the situation of ancient visual art, there were no examples of ancient music available for copying or inspiration. Renaissance theorists *imagined* what ancient music would have been like, but the impact of these reconstructions on actual musical practice was slight.<sup>116</sup> Apart from some experiments in monody, music continued to be complex polyphony based on aggregates of musicians playing in consort, which is a medieval concept, not an ancient one (James 1993, 80). Josquin des Prez (c. 1450/1455–1521) was the great musical figure of the High Renaissance, and his music owes nothing whatsoever to antiquity (Godwin 1987, 94). It seems that Renaissance humanism was not keen to express its ideals in music, due to the absence of any venerable ancient examples.

### *The new artist*

The 15th and 16th centuries saw the rise of the new humanist self-image, known as *l'uomo universale* or polymath. The ideal Renaissance courtier should have a detached, cool, nonchalant attitude, speak well, sing, recite poetry, have proper bearing, be athletic, know the humanities and classics, paint, draw and possess many other skills. Mirroring this courtly self-image, the concept of the artist as an intellectual was born (Joost-Gaugier 2009, 243). A reflexive re-reading of the Renaissance texts will consider this new attitude as individual self-expression, a step towards self-consciousness. This new vision of the artist was connected to a re-creation of what the humanists thought was ancient music. To revive the power of music that Orpheus was reputed to have wielded, the humanists of the later fifteenth century practised improvised singing of poetry sustained by a *lira da braccio* (Godwin 1987, 95). In time, as will be explained below, this contributed around 1600 to the emergence of opera (James 1993, 87).

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<sup>116</sup> See for instance the description of ancient music by Vincenzo Galilei, in Strunk (1998, 466).



### The new music

The intention of Renaissance humanists was to restore the supposed golden age of antiquity, ‘a lost epoch of excellence, virtue, and mystical wisdom’ (James 1993, 99; Celenza 1999, 676).<sup>117</sup> It certainly was the motto of the influential music treatise titled *Dialogo della musica antica, et della moderna* (1581) by Vincenzo Galilei (1520-1591), father of the famous astronomer Galileo Galilei.<sup>118</sup> As Peter Pesic writes, Vincenzo thought ‘that Greek music had been strictly monophonic, a single melodic line having extraordinary powers of rhetorical persuasion and emotional effect based on its supple melody and its use of various musical modes suited to the emotions being evoked’ (Pesic 2014, 48). These ideas were put into practice by Vincenzo Galilei together with a gathering of composers, known as the Florentine *Camerata*, when they were commissioned to compose a suite of six musical interludes, *intermedii*, to the staging of the comedy *La Pellegrina* in 1589 in the Uffizi Palace in Florence. The first *intermedio* was titled *L’armonia delle sfere*, thus strictly speaking the first known case of the re-creation of ancient heavenly harmony. This experiment to re-create the supposed power of ancient music led in the next two decades to the development of the *dramma per musica*, the opera, including the *recitativo secco* as a monodic solo with an improvised accompaniment.<sup>119</sup> Jamie James thinks that the *Pellegrina intermedii* were little more than ‘watered-down repetitions of the Pythagorean-Platonic beliefs’ for court entertainment, ‘intellectually and spiritually very far from the profound sublimity of the originals’ (James 1993, 109). Joscelyn Godwin, on the other hand, thinks that ‘the first operas were no less than the sacred dramas of a revived Neoplatonism’ (Godwin 1987, 95). The recitative was an important musical innovation, pointing towards future developments like *Sprechgesang* and even rap. Julius Portnoy argues that ‘Italy had

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<sup>117</sup> Christopher Celenza even argues that Ficino’s *prisca theologia* was inspired by Iamblichus’ construction of a golden age of theology before Plato (Celenza 1999, 675).

<sup>118</sup> Vincenzo, embracing the principle of physical science, demonstrated that Pythagoras’ theory of intervals of blacksmiths’ hammers was incorrect (Bonds 2014, 39).

<sup>119</sup> James observes that there is no formal resemblance at all between the *intermedii* and ancient Greek music (James 1993, 106). He observes how bizarre it will seem to us today, that Galilei’s earnest exhortation to simplicity and spirituality led directly to the birth of the opera, ‘the most extravagant and voluptuous form of musical entertainment ever devised’ (James 1993, 101).

become the musical center of Europe with the discovery of monody, a solo song with accompaniment, which the *Camerata* employed as a reaction against the complex polyphonic singing of the sixteenth century. The monodic style of singing had made the opera most acceptable to the Italians and had spread this new musical form and style of singing throughout Europe' (Portnoy 1954, 160-161).<sup>120</sup> To Daniel Chua, 'the vocal turn in music, from which opera is born, is a symptom of disenchantment' (Chua 1999, 29). He sees a connection between the *Camerata's* submission of music to words and the Reformation; he writes that 'the epistemic shift in the sixteenth century had narrowed *logos* down as the intelligible utterances of the mind of God or man which music must imitate in a declamatory fashion. Music represents words' (Chua 1999, 25; 33). To Chua, 'monody signifies an ontological shift: the harmony of the spheres has collapsed into the song of the self' (Chua 1999, 34). To me, this scholarly chaos indicates the problem when it comes to interpret the connection between actual and cosmic music: it is a paradox.

Composing for the stage demanded a new way of relating music to the non-musical, which was called the *stile rappresentativo*. Its musical signs and gestures represented human relationships, emotions and personal characteristics, drawing upon the ancient association between bodily movements and music (Small 1998, 147). Christopher Small argues that the beginnings of the representational style in the West 'can be seen as far back as the love songs of the troubadours, who sang *as if* they were in love'; it 'has completely taken over Western musicking' and 'has also flowered over into Western popular music' (Small 1998, 151-152). He is joined in this by Peter Pesic, who even thinks the *stile rappresentativo* illuminates 'a crucial stage in the development of expressivity as the essential project of contemporary music' (Pesic 2014, 48). Clearly, the experiment of re-creating ancient Greek music had sparked off a new vocal style in composed music. Was it an expression of cosmic music? I think we should not equate Greek music with

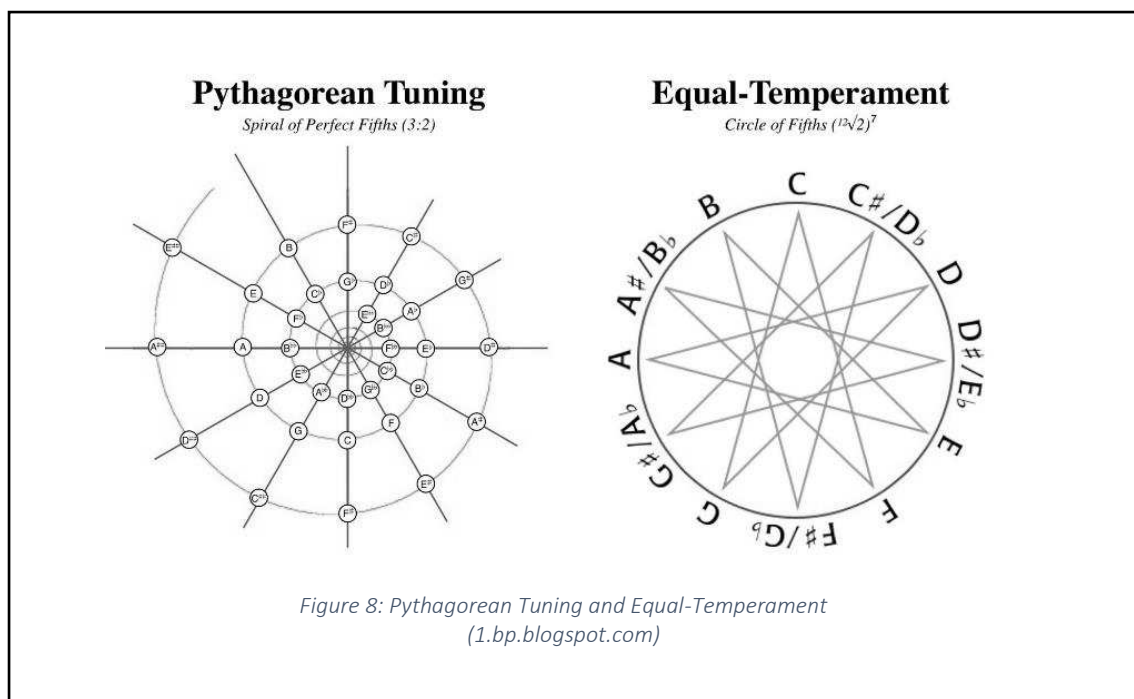
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<sup>120</sup> Portnoy also observes that 'throughout the Renaissance and Baroque periods, musicians in some way or another paid heed to ancient Greek theories of music, especially melody following the inflections of poetry. But increasingly the art of chordal progressions replaced the example of Greek monophony, rendering ancient ideas irrelevant' (Portnoy 145-146). The question of the primacy of music or words has been elegantly solved by composer Ned Rorem: 'Song is the reincarnation of a poem which was destroyed in order to live again in music. The composer, no matter how respectful, must treat poetry as a skeleton on which to bestow flesh, breaking a few bones in the process. He does not render a poem more musical (poetry isn't music, it's poetry); he weds it to sound, creating a third entity of different and sometimes greater magnitude than either parent' (Rorem cited in Boyce-Tillman 2016, 223).

cosmic music. Monodic singing does not necessarily reflect the sacred order of the cosmos. Some four hundred years later, Paul Hindemith wrote a whole opera on the theme of cosmic music, titled *Die Harmonie der Welt*, based on the life of Johannes Kepler. Is the subject matter enough to describe it as cosmic music? I think not. To me, it all seems more a culturally defined collective belief than a genuine revelation of the sacred.

### The new tuning

Polyphony stimulated a new development in music, namely the replacement of Pythagorean tuning, based on perfect fifths, by equal temperament, based on twelve



equal, 'imperfect', semitones (figure 8).<sup>121</sup> It is usual to attribute this to the post-medieval development of fretted instruments and keyboards, which demanded a 'one-size-fits-all' tuning, so that consorts of instruments and voices were able to perform together, making music in different keys.<sup>122</sup> The Renaissance dispute on tuning also reflected a

<sup>121</sup> On tuning and temperament, see for example Alain Daniélou (1995) *Music and the Power of Sound: The Influence of Tuning and Interval on Consciousness*; Suzannah Clark (2001) *Music Theory and Natural Order from the Renaissance to the Early Twentieth Century*; and the anthroposophical ideas of Heiner Ruland (1992) *Expanding Tonal Awareness. A Musical Exploration of the Evolution of Consciousness – From Ancient Tone Systems to New Tonalities – Guided by the Monochord*.

<sup>122</sup> Although the construction of pipe organs from the thirteenth century was based on tone synthesis with harmonics, only in 1636 the first sound analysis of the harmonics of a complex tone was published, by Marin Mersenne (Roederer 1975, 133).

philosophical divide. Just as in the ancient dispute between the Pythagoreans and the Aristoxenians, there were two conflicting principles, on the one hand the desire for the supernatural perfection of a system based on whole numbers, and on the other hand the practicality, based on the - correct - observation that all scales are man-made. No writer of antiquity had given the half-tone step a precise ratio, and the music theorist of the sixteenth century struggled with the irrational numbers, which were required to define equal temperament, based on twelve equal semitones of  $^{12}\sqrt{2}$ . As Suzannah Clark explains:

What the *cognoscenti* of the Florentine *Camerata* and elsewhere did in their studies of tuning was simply to 'correct' what they conceived of as flaws in nature. By taking such measures as eliminating the Pythagorean or syntonic commas, which invariably hamper the full enharmonic potential of the diatonic system, they forcibly closed the gap in the 'spiral of fifths' and created the 'cycle of fifths' on which the modern conception of the nature of tonal music has rested ever since (Clark 2001, 6). (see figure 8)

Equal temperament contributed decisively to the development of the keyboard; it is no coincidence that from the baroque era on most composers were keyboard players. Consequently, Western music developed a rich musical style of chord progressions, and melody became little more than a link between chords. From the late seventeenth century on, instrumental music first gained complete independence from vocal models, dance, and background usage (Godwin 1987, 96). Singers were trained to use their voice as an instrument, which still today divides the popular and the classical styles of singing. The interesting question is: should we consider this the defeat of Pythagorean theory by the Aristoxenian approach? Strictly speaking, the answer is yes. Some argued that, to regain the ancient sense of heavenly harmony, one should abandon equal temperament and return to the Pythagorean fifth and the *Timaeus* scale. In this vein, Jacomien Prins has argued that Ficino was trying to re-enchant the music of his times, which was rapidly being modernized (Prins 2014, 18). However, I suggest looking beyond the debate on tuning; the natural, acoustic phenomenon of harmonics belongs to a different ontological order than the human, cultural-determined construction of a scale. A perfect fifth is in itself no more cosmic than an imperfect third. Harmonics are present in practically every natural or musical sound; the effect of the scale is, however, completely dependent on the listener. Nobody has yet proven the direct effect of pure consonants on consciousness; reflexive re-reading of the debate on tuning systems should thus try to step beyond the issues, and look for more. In my understanding, the transformative

aspect of music lies in musical *motion*, which is connected to, but not identical with the fixed geometry of consonances. As Plato said, the ears are to hear harmonious *motions* (Plato *Republic* VII 530d).

### *Platonism reborn*

The main source of inspiration for the re-creation of ancient heavenly harmony in the Renaissance is the work of the Florentine philosopher Marsilio Ficino. Ficino believed that the Pythagorean-Platonic celestial harmony is imitated on earth in such phenomena as changes of seasons, the tides of the sea, the directions of winds, and the growth of trees, plants, and flowers (Prins 2014, 29). Ficino practised music himself and connected it to philosophy, astrology, music therapy and natural magic.<sup>123</sup> Unfortunately, his music has not been notated and his writings do not give away how exactly this cosmic music sounded, which makes it difficult to draw any conclusions. However, his influence in the transmission of ancient ideas and creating connections makes him one of the most important figures in the history of cosmic music in the Western world.

Ficino was the son of a physician and studied medicine before Cosimo de' Medici commissioned him to translate and comment upon the complete works of Plato.<sup>124</sup> Ficino's Platonism was heavily influenced by the *Corpus Hermeticum* and the concept of a *prisca theologia*, a tradition of perennial divine wisdom which preceded Plato and included Pythagoras.<sup>125</sup> He was at the centre of a circle of intellectuals in Florence known as the Platonic Academy, established after Gemistus Pletho reintroduced Plato's thoughts during the Council of Florence (1438-39). Ficino, who became a priest in 1473, aspired to uphold the compatibility of Christian and Platonic ideas. However, medieval scholasticism and Enlightenment rationality were soon to break apart, and the High Renaissance can

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<sup>123</sup> On Ficino's practice, see Ficino's *Liber de Vita*, translated by Angela Voss (2006), especially 'On obtaining life from the heavens' chapter 21, 152 ff.; D.P. Walker (2000) *Spiritual & Demonic Magic: From Ficino to Campanella*; Gary Tomlinson (1993) *Music in Renaissance Magic. Towards a Historiography of Others*; Jacomien Prins (2014) *Echoes of an Invisible World: Marsilio Ficino and Francesco Patrizi on Cosmic Order and Music Theory*; Angela Voss (1992) 'The Natural Magic of Marsilio Ficino'; Christopher Celenza (1999) 'Pythagoras in the Renaissance: The Case of Marsilio Ficino'.

<sup>124</sup> On Ficino's life, see Celenza (2015) 'Marsilio Ficino', *The Stanford Encyclopedia of Philosophy*. Also, Nicholas Goodrick-Clarke's introduction to Angela Voss' *Marsilio Ficino* (Voss 2006, ix-xi).

<sup>125</sup> On the *prisca theologia*, see Christopher Celenza (2015) 'Marsilio Ficino', in *The Stanford Encyclopedia of Philosophy*.

be considered as a short interlude of balance between the two worldviews (Voss 2006, 4).

Ficino elevated Platonism to a status that almost equalled established religion. His Platonic cosmology is firmly rooted in the *Timaeus*, but seen through Neoplatonic and Hermetic eyes, which implied a symbolical rather than a literal approach to Plato's creation myth. Pagan philosophy was proclaimed a mystical prophecy of the coming of Christ, and thus a legitimate source of devotion. For his theology, Ficino borrowed heavily from ancient thought. He proclaimed that, by means of the intellect and will, the human soul aspired to union with all things and even to God (Voss 2006, 21). Inspired by Iamblichus, the *Corpus Hermeticum*, and other late antique texts, Ficino developed a range of practical activities outside Christian ritual to reveal divine symbolic meaning through astrology, invocation, talismanic magic, reading signs as divination, herbal medicine, and music. He had to be careful not to cross the line with magic; as D.T. Walker puts it, 'the Church has her own magic; there is no room for any other' (Walker 2000, 36). Ficino's Platonism included practice, and his own music making can be considered 'philosophy in action'.

### *The singing philosopher*

At the start of his career, Ficino translated the Hellenistic *Orphic Hymns*, invocations to the gods and daemons, which he presented at the Florentine Platonic Academy. He did not publish these pagan texts, but sang them to his friends in this circle. Ficino adopted an Orphic *persona*, playing his lyre and singing ancient theological poetry (Voss 2006, 7). He improvised as a dynamic creative act (Prins 2014, 135). He justified this pagan magical, musical ritual by discriminating between ordinary selfish magic and the humility of the devout poet who becomes a channel for the divine power of Platonic *furor* or frenzy (Voss 1992, 28). The magic was based on the late antique concept of a harmonic cosmos with a network of sympathies that might be exploited by human operations (Tomlinson 1993, 87). Ficino was concerned with his own health, especially a tendency to melancholy

connected to the rigors of scholarly life, and needed the influx of astral power to heal himself.<sup>126</sup>

In Ficino's psychology, the lifeless body is connected to the animating soul by the *spiritus* - a thin airy spirit (Tomlinson 1993, 106). For Ficino, music is such a spirit, an aerial and rational animal (Ficino *Liber de Vita* 3.XXI; Tomlinson 1993, 111-112). His song of the stars thus acted as a link between musician, audience and the heavens, and could be considered as a form of theurgy. It is interesting to see that Ficino is attributing a form of psychic life to music itself. Ficino's musical psychology was more than a theory; it was a form of self-reflection based on practice. To compose or improvise psychologically effective songs, he gives three, musically unspecific, rules: use the right words; use the right musical idiom; catch the heavenly influx (Ficino *Liber de Vita* 3.XXI). On the specifics of music, Ficino supplies the characteristics of the planetary intelligences, for example the music of Jupiter should be 'deep, earnest, sweet and joyful with stability' (Ficino *Liber de vita* 3.XXI). The three essential requirements of Ficino's astral musical magic were the power of the song itself, the right astrological time of performance, and the intention and desire of the performer (Voss 2014, 6). To realise Ficino's music, one would have to be an expert astrologer, as he demands continual awareness of the movements of the heavens, following them with the eyes and the mind (Voss 1992, 25-27; Ficino *Liber de Vita* 3.XI). Ficino had pointed out that the faculty of foreknowledge was more a *dos animae*, a gift of the soul, than judgment. In other words, mere application of the rules of astrology to predict events is one thing; opening up to divine inspiration is quite another. As Geoffrey Cornelius has argued, the late antique and medieval form of astrology was based on Ptolemaic determinism, but Ficino's astrology was inspired by an older, magical-religious conception (Cornelius 2003, 324-325). His understanding of astrology as divination was thus a radical move for his time (Voss 2016b, 12). To quote Eugenio Garin: 'It is in this universal harmony that Ficino justifies astrology, together with magic, as being the concord of everything, in a concept which was to be so popular throughout the centuries, whilst the figures which peopled the heavens were transfigured into a fantastic vision of the cosmos, in the form of beauty which is also truth'

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<sup>126</sup> Peter Ammann argues that Ficino gave shape to the Renaissance idea of the melancholy creative genius, depression being the inevitable precondition for truly creative work; and that this process aimed at the Jungian principle of individuation (Ammann 1998, 574).

(Garin 1983, 75-76). After Ficino, the mainstream tradition of classical astrology remained firmly based on Ptolemaic determinism, but in more recent times a psychological approach to astrology has found some support in the theories of Carl Jung (Voss 2006, 52).

Ficino, in the words of Jacomien Prins, saw the universe 'as a musical Creation in which every planet is characterized by a kind of spiritual or intellectual power, which is directly derived from God (Prins 2014, 113). Although never made explicit, it seems obvious that Ficino was aiming at a religious experience through music, re-aligning his soul beyond the stars with the Monad or God, to be reborn as a son of God, an angel (Voss 2016b, 8; 18).<sup>127</sup> Did Ficino really heal himself or his friends through astral music? There is insufficient reliable evidence to draw such a conclusion. Ficino's astral music was a deliberate attempt to imitate ancient practice, and thus he stands outside the music of his own time. His hymns, I think, are better described as musical prayers than as music in the ordinary sense. I conjecture that he balanced his melancholy by addressing his prayers to the Sun as the symbol of God, and to Ficino that could be either Apollo or Christ. The importance of his contribution to the concept of cosmic music as astral magic cannot be exaggerated. Through Ficino, the ideas of Pythagoras, Plato, Iamblichus, and others received a new impact on music therapy, musical cosmology, and musical magic.

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<sup>127</sup> Jamie James thinks that 'Ficino's solar hymns were probably closer to religious rites than musical concerts' (James 1993, 123).



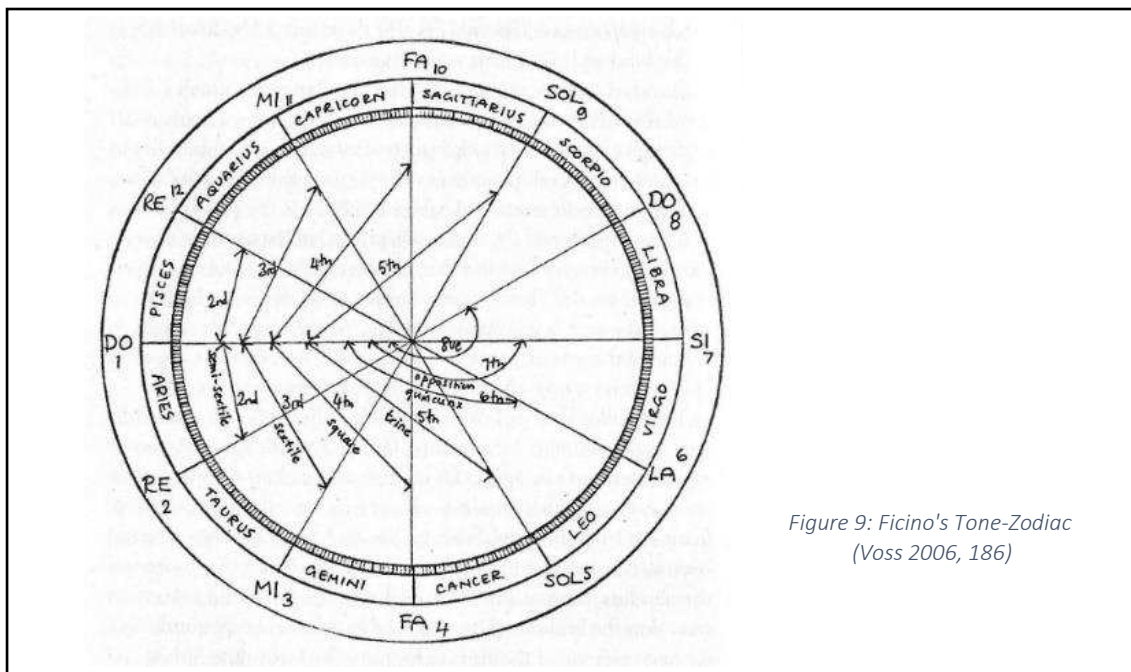


Figure 9: Ficino's Tone-Zodiac  
(Voss 2006, 186)

### Planetary music

Ficino's concept of cosmic music has a special value because of the new connections he established between music and the stars. When it came to divine revelation, Ficino ranked the auditory arts over the visual arts (Tomlinson 1993, 134). He did not bother to represent the perceived or constructed astronomical measurements in music, but connected the musical intervals to the signs of the zodiac on the basis of their symbolical, astrological characteristics. He laid out a one-octave scale on the twelve signs, 'based on the intricacies of specific intervallic relationships in audible music, the relationship of the human senses to specific proportions of fire, earth, air and water, and finally what he calls the 'astronomical causes of harmony', the angular relationships of the zodiacal signs' (Voss 1998, 31) (figure 9).<sup>128</sup> With this new approach he was building on ideas of Ptolemy, and more recently of Ramos de Pareja (1482). As Gary Tomlinson has argued, in this way the Renaissance thinkers were bringing together the *musica mundana* of the order of the heavens with the *musica humana*, related to musical ethos and the properties of the modes (Tomlinson 1993, 71). Leaving behind the mechanistic scheme of the planetary

<sup>128</sup> Ficino shows allegiance to his lyre, and to the contemporary state of tuning, by choosing a diatonic scale of seven steps, with an awkward repeat to fill up the series, instead of a chromatic scale of twelve equal half-tone steps. He advocated a syntonic tuning with consonant thirds and sixths, in accordance with contemporary musical practice and correlating with astrological constructs (Voss 2006, 187). Prins calls this 'something small but significant to the rationalization of musical materials' (Prins 2014, 117).

chord, the assignment of modes to planets signified a parallel to the re-introduction of the ensouled Pythagorean-Platonic cosmos; modes became the characteristic features of individual planetary intelligences (Tomlinson 1993, 83). Ficino also connected the twelve signs of the zodiac to twelve guardian gods or angels or intelligences, thus preparing the way for 'zodiacal' music (Kaske 1982). As the connections between the constellations and music became more complex, a form of cosmic music became conceivable that went beyond the static scale or mode, and become a dynamic, moving representation of the 'dance of the stars'.

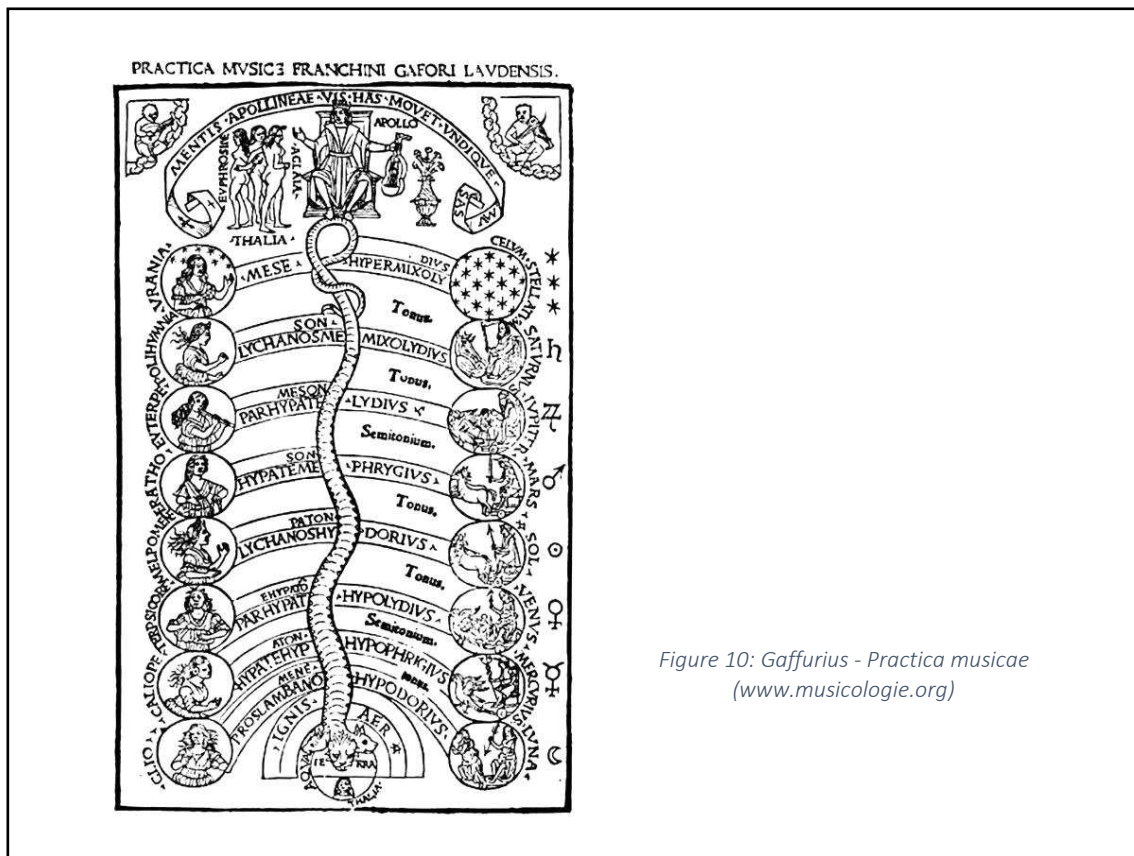


Figure 10: Gaffurius - *Practica musicae*  
([www.musicologie.org](http://www.musicologie.org))

With Ficino, cosmic music re-entered a tradition of philosophy, poetry, magic and esoteric knowledge. In the words of Gary Tomlinson, the Renaissance authors 'endowed the age-old belief in celestial harmony with an ideological potency it had not enjoyed since the end of the ancient era' (Tomlinson 1993, 97). At this point in history, cosmic music so to speak switched course from outer space to an inner world, which could be

accessed by consciousness through introspection.<sup>129</sup> Music as therapy, based on Pythagorean and Platonic notions of ‘ethos’, remained part of the art of medicine but was soon divorced from the sacred by the Enlightenment emphasis on the scientific method. As a result, contemporary scientific music therapy almost never relates to the sacred. Ficino’s philosophy of music was carried forward into occultism by Henry Cornelius Agrippa of Nettesheim (1486-1535) and into music theory by Franchino Gaffurio (1451–1522), whose famous frontispiece to his *Practica musicae* displays the new cosmic music in one single image (figure 10).

Echoes of Ficino’s doctrine of cosmic music can be heard in *Il Cortegiano* by Baldesar Castiglione, and in the works of the French and Italian Academies of the sixteenth century (Voss 2016, 11). As Jacomien Prins has argued, in the later sixteenth century the concept of the harmony of the spheres moved ‘from the macrocosm into the microcosm of the soul of a talented musician, shifting the magic of the harmonic cosmos to the inner voice of human nature’ (Prins 2015, 234). She calls this a shift of understanding of music ‘from melodic incantation to harmonic calculation’ (Prins 2014, 415). However, Jamie James thinks that it would not be an exaggeration to say that ‘the Pythagorean-Platonic conception of the musical universe was just as important to the Renaissance and to the ages that followed, almost to the end of the eighteenth century, as Christianity was to the Victorian age’ (James 1993, 111). He considers *The Planets* by Gustav Holst of 1916 to be ‘almost a literal rendering of Ficino’s sketches of the planetary music’ (James 1993, 121). In the intervening four hundred years, planetary music had moved into the concert hall and employed a symphony orchestra to express its mystical idea – or was the idea lost in the process? I will come back to this question in the following chapters.

### A new sun

In 1600, the philosopher Giordano Bruno was burned at the stake in Rome. Bruno was full of new cosmological ideas, such as the heliocentrism of Copernicus, but he was probably condemned for practising sun *worship*, among other forms of pagan practices (James 1993, 126). The incident is characteristic of the parting of three currents of Renaissance thought: Christian geocentric cosmology, grounded by the Church in

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<sup>129</sup> This theme has been taken up in 1982 by Thomas Moore in his *The Planets Within. The Astrological Psychology of Marsilio Ficino*.

Aristotle; the Hermetic tradition, illuminated by Neoplatonic thought, and open to sun worship; and the new scientific method, deriving authority from physical laws only. The Reformation would undermine the authority of the Church of Rome, and the scientific revolution and subsequent Age of Enlightenment would establish the rule of physicalism. The triumph of heliocentrism as a scientific truth was iconic of this transition. It was however not until 1687, with the publication of Isaac Newton's *Principia Mechanica*, that astronomy was thoroughly divorced from universal musical harmony (Heninger 1974, 132).

Johannes Kepler (1571-1630) is a difficult case to investigate. On the one hand, he is often represented as the Renaissance Pythagorean-Platonic cosmologist *par excellence*. His book *Harmonices mundi libri V* (Harmonies of the World, 1619) established a direct relationship between the planetary ellipses around the sun and the five Platonic solids: octahedron, icosahedron, dodecahedron, tetrahedron, and cube, connected to the four elements and the heavens respectively (Plato *Timaeus* 55). In the preface to his *Mysterium Cosmographicum* Kepler argues that the Creator had his eye on the five solids when he created 'this mobile world' (Heninger 1974, 110). The division of the ecliptic into twelve parts and the five consonances of music were according to Kepler due to the proportions of the Platonic solids (Kepler *Mysterium Cosmographicum*, chapter 12; Godwin 1989, 230).<sup>130</sup> Although the geometrical perfection of Kepler's heliocentric cosmology had strong connections to heavenly harmony, it was divorced from *musica humana*. Kepler, following Plato, saw soul as the motivating force behind the movements of the planets until 1621, when he decided that the rational orderliness of planetary motion was indicative of a corporeal force (Skrbina 2005, 187). His discoveries formed the starting-point for Newtonian mechanics, which, coupled with Cartesian dualism, in time reduced the soul to something incarcerated in the matter of the brain.

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<sup>130</sup> Kepler proposed to see the string of a monochord as a circle, matching consonances with solids and astrological aspects. However, he saw the zodiac as imaginary. He also concluded that the division of the string is not made on a circle, leaving it to the industry of others to investigate concords and aspects. Joscelyn Godwin takes this as wisdom not to compare the arithmetically divided circle of the zodiac with the logarithmically divided string (Godwin 1989, 235-236).

In 1977, the musician-researchers Willie Ruff and John Rodgers created a sonic realisation of Johannes Kepler's planetary data laid out in his 1619 treatise *Harmonices Mundi* (Ruff 2008). There is no trace of human emotion in their synthesized music. For me it exemplifies how *not* to make cosmic music. Kepler himself was involved in the practice of music as an amateur, but he did not consider himself to be a composer or performer (Pesic 2014, 73). For Kepler, the silent planetary harmony resembled contemporary polyphony, notably the vocal music of Orlando di Lasso, which he adored.<sup>131</sup> His musical cosmology was aimed at solving the paradox by constructing physical laws, unrelated to human consciousness. Rather than presenting Kepler as the climax of the development of musical cosmology, he should be seen as the final break with the ancient world of mystery, connected with a triumph of modernism.

### Janus

Did Ficino hear the music of the cosmos and sing it out aloud? As a reflexive re-reading, I think Ficino's Pythagorean life-style and his Neoplatonic worldview could have induced a holistic experience of the cosmos, and the Monad as the source of all reality. He would read that idea in some Platonist texts and his special attention to the image of the sun as a symbol of God in his work suggest it (Celenza 1999, 699). Angela Voss argues that Ficino was occasionally possessed by a Platonic 'divine frenzy', as witnessed by Bishop Campano in 1471: "And there is frenzy; when he sings, as a lover to the singing of his beloved, he plucks his lyre in harmony with the melody and rhythm of the song. Then his eyes burn, he leaps to his feet and he discovers music which he never learnt by rote" (in Voss 2016b, 4n18).<sup>132</sup> D.P. Walker argues that Ficino's experiment to *directly* encounter the sacred through making music did not really live on in the subsequent ages (Walker 2000, 26). Gary Tomlinson has argued that the impact of Ficino's musical ideas was far more

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<sup>131</sup> As Peter Pesic writes: 'Kepler emphasizes the polyphonic character of contemporary music as the model for the polyphony of planetary music, in contrast to the ancients, whose "music of the spheres" (*musica mundana*) and "instrumental music" (*musica instrumentalis*) he considers to have been restricted to a single melodic line' (Pesic 2014, 78). Oddly, his description of the pleasures of listening to music make extensive use of erotic imagery, speaking of numbers as phalluses and vulvas; melodic lines seeking orgasms and ejaculations (ibid., 82-84).

<sup>132</sup> However, it is a matter of scholarly debate whether in Ficino's magical songs only the words conveyed meaning, or the music as well (Tomlinson 1993, 101). Even if they did, to Ficino music was a kind of image (ibid., 120). His musical ritual was not designed to address the body, and a separation of body and soul may even have been its goal (ibid., 174).

profound than any tracing of their specific influence will reveal (Tomlinson 1993, 143). However, it did not lead to a tradition of *practice* of astral music, not as therapy nor as magic. Jacomien Prins has pointed out that Ficino saw music as ‘capable of expressing metaphysical laws directly’ and is thus ‘the artistic medium par excellence in which God’s creativity can be echoed’ (Prins 2014, 133). The upward path of the soul through incarnation in a human body is ‘a return to a musical paradise from which it has fallen’ (Prins 2014, 144). This foreshadowed the development of symphonic music as a divine revelation of the Romantic era. However, whereas Ficino and the Florentine *Camerata* advocated a return to a classical golden age of Greek music and philosophy with little success, the Romantic era expressed this longing for enchantment in the musical language of the symphony orchestra, which is still very much relevant today.

## 7. The absolute music of the Romantic era

Language, as the organ and symbol of phenomena, can never uncover the innermost core of music but, once it attempts to imitate music, always remains in superficial contact with it, and no amount of lyrical eloquence can bring its deepest meaning a step closer.

(Nietzsche *The Birth of Tragedy*; 1993, 35)

As I move from the Renaissance to the Romantic era, ancient Mediterranean cosmology loses terrain and becomes less relevant, and music moves towards a West-European idiom, still with us today.<sup>133</sup> In fact, the music of the nineteenth century, exemplified in the symphony orchestra, is truly contemporary, not only because it is still heard and revered in the concert hall around the globe today, but because it is newly recreated to sustain the appeal of contemporary movies such as *The Lord of the Rings*, *Harry Potter*, and hundreds of others, reaching millions of people.

### A new universe

As C.S. Lewis has argued in his book *The Discarded Image* (1964), medieval man constructed a 'bookish' 'Model of the Universe', dominated by late antique sources, which was abandoned only at the end of the seventeenth century (Lewis 1964, 11-13). In terms of the cosmology of the heavens, the break resulting from the heliocentric theories of Copernicus and Galileo shifted the cultural and scientific worldview from the ancient geocentric and finite model, and its musical connotations, to a new universe based on the 'scientific method', in the sense that Thomas Kuhn has introduced in 1962 in his seminal book *The Structure of Scientific Revolutions*.<sup>134</sup> The night sky lost its inhabitants of mythical star-animals and angels; it became empty, infinite space, ruled by gravity and other blind forces. The post-enlightenment conception of heaven was thus ontologically separated from the past by this 'paradigm shift'. However, no major break in the practice of music seems to have taken place in the same period. This seems to indicate that the

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<sup>133</sup> On the philosophy of music of the Romantic era, see Dahlhaus, Carl (1989) *The Idea of Absolute Music*; Mark Evan Bonds (2014) *Absolute Music. The History of an Idea*; and Oliver Strunk (1998) *Source readings in music history*. On the Romantic era in music, see for instance Burkholder, Grout, Palisca (eds) (2014) *A History of Western Music*.

<sup>134</sup> Kuhn, Thomas A. (1962) *The Structure of Scientific Revolution*. Chicago IL: University of Chicago Press, challenged the idea of steady scientific progress by introducing the concept of the 'paradigm shift', which asks new questions and so to speak changes the rules of the game.

development of the practice of music was unfolding on its own terms, independently from cosmology. In the Romantic era, music acquired religious dimensions, and symphonic music became the object of a quasi-religious cult. It may be argued that Romanticism was a reaction to the disenchantment of the world. However, in contrast to the Renaissance, the Romantic era did not long for the lost paradise of antiquity, but sought an unattainable utopia, and perfect music beyond physical reality (Chua 1999, 172). Unlike the aristocratic court of the Renaissance, the 19<sup>th</sup> century concert audience had to sit still and be silent, and the musician, especially the composer, acquired a semi-divine status.<sup>135</sup> Music was aspiring to the absolute.

### *Absolute Music*

The term 'absolute music' was coined in 1846 by the composer Richard Wagner (1813-1883) (Chua 1999, 224).<sup>136</sup> It pointed to the idea that music's essence is autonomous, self-contained, and wholly self-referential (Bonds 2014, 1). With this term, Wagner wanted to indicate the kind of music that, unlike his own operas, was instrumental and had no programmatic title, and was thus non-representational.<sup>137</sup> But soon this led to a debate among the Romantics on the primacy of the word or the tone, and on the essence and effect of music (Bonds 2014, 9). Wagner's main antagonist was the music critic Eduard Hanslick (1825-1904), who launched the theory of absolute music in his treatise *Vom Musikalisch-Schönen* (1854). That debate has in fact never ended. In Hanslick's work, the term 'absolute music' indicates that instrumental music points to the absolute, because it points to nothing other than itself. For Hanslick, the effect of music lies in an autonomous and specifically musical manifestation of absolute beauty, consisting of tonally animated forms (*tönend bewegte Formen*) (Bonds 2014, 141). As an avenue to the Absolute, sounding music, although human, could thus be considered a religious

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<sup>135</sup> 'By the 1840s, no one spoke when music spoke' (Chua 1999, 276).

<sup>136</sup> The most important study to date on the idea of absolute music was published in 1978 by Carl Dahlhaus (1989); more recent publications include a provocative work by Daniel Chua (1999) and a comprehensive treatment by Mark Evan Bonds (2014).

<sup>137</sup> In his book *A Million Years of Music* Gary Tomlinson traces the origin of absolute music to some 40.000 years ago, when the first musical instruments with fixed pitches were produced, which he interprets as 'an element resistant to signification' (Tomlinson 2015, 258).



revelation.<sup>138</sup> For Carl Dahlhaus, this concept originated in German Romanticism; it was the leading idea of the classical and Romantic era in music aesthetics, and remained omnipresent in the twentieth century (Dahlhaus 1978, 3).<sup>139</sup> Mark Evan Bonds has argued in his *Absolute Music. The History of an Idea* of 2014 that absolute music is a uniquely Western concept and has been central to Western aesthetics from roughly 1850 until 1970, enjoying its greatest prestige after 1945 (Bonds 2014, 297-298). I agree with his theory, and therefore I have constructed this chapter around the idea of absolute music. Bonds' theory focusses on a paradigm shift in the philosophy of music, which has been well received.<sup>140</sup> Below I will consider Bonds' theory in more detail.

Absolute music is often considered to have inspired the orchestral works of Bach, Beethoven and Bruckner (Dahlhaus 1978, 123). The absolute music itself cannot be heard with the ears, because it is pure form. That should remind us of Pythagoras. For the contemporary musicologist Daniel Chua, 'if music was ever absolute then [antiquity] was the only time in history that music was genuinely absolute music. (...) What the Romantics discovered as absolute music was a mere shadow of what Pythagoras formulated two thousand years earlier, for the absolute music he bequeathed to humanity was not so much a music to be composed as a music that composed the world' (Chua 1999, 14-15). Chua states that modern music became an autonomous object when the world was disenchanted by modernity, the supernatural aspects of music were demystified as natural, and the inaudible, invisible essences of the heavenly harmony dismissed as non-existent (ibid., 18). He calls the Romantic concept of absolute music 'the cosmology of a transcendental ego in search of an unattainable wholeness', 'a symptom of a disenchanted world rather than a solution' (ibid., 22). Absolute music, writes Chua, breaks the shackles of the material world by releasing the soul from the body (ibid., 222).

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<sup>138</sup> Ludwig Tieck, one of the founding fathers of the Romantic movement: 'For music is certainly the ultimate mystery of faith, the mystique, the completely revealed religion' (quoted in Dahlhaus 1978, 89).

<sup>139</sup> Chua thinks that the musical score of the sixteenth century rationalised musical notation 'by containing music within a geometrical space that pictures the totality as a map' (Chua 1999, 54). In his opinion, out of the development of absolute control over music, first by the continuo player and then by the conductor, the absolute music of the nineteenth century evolved (Chua 1999, 60).

<sup>140</sup> See Chua, Daniel K.L. (2015) Review of Mark Evan Bonds, *Absolute Music: The History of an Idea*, in *Music Theory Online*, Journal of the Society for Music Theory, vol. 21, no. 2, June 2015. Source <http://www.mtosmt.org/issues/mto.15.21.2/mto.15.21.2.chua.html>. Accessed 14/01/2017.

As the Pythagorean-Platonic cosmology had lost much of its hold on science, the Romantics did not consider the roots of the idea of absolute music to go back to Pythagoras and Plato (Bonds 2014, 9-10). They did realise, however, that instrumental music was at odds with the Platonic ideal of music as a unity of *harmonia*, *rhythmos* and *logos* (music, dance and words), in which *logos* took the lead (Plato *Republic* 398d-400d). This ideal was never doubted until the seventeenth century (Dahlhaus 1989, 8). Wagner advocated a return to this unity, represented by his operas as ‘total works of art’, which did not mean however that Wagner denied the existence of absolute music. Hanslick proposed to move beyond the Platonic ideal, thus advocating a new future for music (*‘reine Musik’*; Bonds 2014, 7). Connections between the concept of absolute music and ancient philosophy were sometimes employed in the debate. For instance, instrumental music was sacralised like an ancient statue of a god – the religious idea being not merely ‘symbolized’ but immediately present in the statue, as Hegel had recently declared (Dahlhaus 1978, 102).<sup>141</sup> But, as Mark Evan Bonds has argued, after the middle of the sixteenth century the Pythagorean-Platonic idea of ‘isomorphic resonance’, that is number in sound, soul and cosmos, lost the field as the explanation of the power and essence of music. Instead, he writes, music was explained in terms of expression, form, beauty, autonomy and disclosiveness, which in time made up the elements of the idea of absolute music (Bonds 2014, 39-40). With this development towards *‘l’art pour l’art’*, philosophical cosmology and the meaning of music parted ways. Below, I will summarise Bonds’ brilliant analysis of this paradigm shift in the history of the philosophy of music.

### *A new paradigm*

Ever since Plato, in principle music was to follow speech in expression. This had consequences for the status of instrumental music, which in antiquity and the Middle Ages was not very highly regarded (Bonds 2014, 59). The principle was successfully reintroduced in the Renaissance, but the debate did not end. Was music an enhancement of speech, or should music rise above speech? During the eighteenth century, instrumental music acquired a new status as a direct expression of feelings (ibid., 67). Drawing on the ancient concept of *mimesis* (representation), the genre of programme

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<sup>141</sup> This seems to suggest a theurgic function of music, originating in the philosophy of Iamblichus (see chapter 4).

music developed, for instance Vivaldi's *Le Quattro stagioni* (c. 1721). Later this idea gave way to the notion of beauty, distinguishing the 'arts of beauty' (*les beaux-arts, die schönen Künste*) from craftsmanship. The new aesthetics raised the idea of beauty in music to an independent status, ineffable (Kant: *unaussprechlich*), passing all understanding, connected to the spiritual (*esprit, Geist*) (ibid., 83-85). Between 1550 and 1850, the Pythagorean explanation of the essence of music as *number*, by itself or as a cosmic law, was slowly replaced by a theory that elevated the *form* of music itself to the position of essence (ibid., 90-102). Bonds quotes Richard Taruskin when arguing that the belief that art should be contemplated for its own sake (*l'art pour l'art*) became 'the dominant regulative concept of both art-theory and art-practice' from the eighteenth to the twentieth century (ibid., 108). This autonomy opened perspectives for music to express new ideas and reach new audiences.

By the early decades of the nineteenth century, Bonds tells us, 'philosophers no longer assumed that verbal language was the highest vehicle of human thought and expression. This new attitude toward the nature of verbal language 'greatly enhanced the status of instrumental music, which as a "language" in its own right, also came to be seen as ontologically constitutive' (ibid., 113). It raised the composer to the status of oracle and it opened the door for a return to the Pythagorean idea that music can disclose the structure of the cosmos (ibid., 122).<sup>142</sup> But when the idea of absolute music was finally launched by Eduard Hanslick in *Vom Musikalisch-Schönen*, the Pythagorean context did not survive beyond the work's second edition. Hanslick thus became the first to define the essence of music in *exclusively* musical terms (ibid., 126-127). He made a clear distinction between natural sound and man-made musical tone, only the last being imbued with the spiritual (*Geist*) (ibid., 143). Bonds thinks that 'by treating [music] exclusively as an object and not as an experience, Hanslick radically altered discourse about the essence of the art' (ibid., 183).

For the musicologist Christopher Small (1927-2011), the man who coined 'musicking', 'there is no such thing in the Western concert tradition as "absolute music," that is, a

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<sup>142</sup> This involved the use of the Pythagorean term *akróasis*, ancient Greek for 'learning through listening'.

musical work that exists purely to be contemplated for the abstract beauty of its patterns of sound' (Small 1998, 153).<sup>143</sup> Small suggests 'that what is being represented when a work of symphonic music is performed is a narrative of human change and development, in which one kind of order is disturbed and a new one is established' (Small 1998, 169-170). However, these human relationships he thinks can extend to the cosmos and the supernatural (Small 1998, 183). Hanslick said more or less the same in the concluding lines of the first edition of his book, lines which had been by 1865:

In the psyche of the listener, furthermore, this intellectual-spiritual substance [*Geist*] unites the beautiful in music with all the great and beautiful ideas. It is not merely and absolutely through its own intrinsic beauty that music affects the listener, but rather at the same time as a sounding image of the great motions of the universe. Through profound and secret connections to nature, the meaning of tones elevates itself high above the tones themselves, allowing us to feel at the same time the infinite in works of human talent. Just as the elements of music – sound, tone, rhythm, loudness, softness – are found throughout the entire universe, so does one find anew in music the entire universe.  
(Hanslick quoted in Bonds 2014, 184)

In his original final paragraph Hanslick reconnects music with the other arts, with the Platonic idea of beauty, and with the Pythagorean-Platonic cosmic music through motion. It refers to *Naturphilosophie*, a pantheist philosophy that saw the universe as an enormous organism, imbued with spirit (Bonds 2014, 192). Bonds explains that 'motion, in the form of energy, is what many *Naturphilosophen* perceived as the unifying element in the cosmos, manifested in such diverse forms as light, heat, magnetism, electricity, gravity, and sound (ibid., 194). *Naturphilosophie* provided Hanslick with the framework for what he thought of as 'objective' aesthetics, for it allowed him to align musical beauty with the unchanging laws of nature (ibid., 207). By deleting the last paragraph from his book, Hanslick severed the link between music and the absolute in the holistic sense of 'that which is all-encompassing' of *Naturphilosophie*, and embraced a formalist realism, that would come to dominate much thinking about music for more than a hundred years (ibid., 209). Thus, reflexive re-reading reveals Absolute music to be a 'runaway child' of ancient cosmic music, denying its ancestry!

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<sup>143</sup> The contemporary philosopher of music Jerrold Levinson also denies the existence of absolute music by calling the creative musical process 'artistic indication' (Levinson 2016, 51). In his view creativity is personal artistic intention, in which the artist holds the central place (Levinson 2016, 57).

## Modernism

After some decades of polemics between the supporters of absolute music and program music, the idea of absolute music became the watchword of musical modernism. As Bonds points out, ‘a significant number of composers rejected the enormous orchestras, advanced chromatic harmony, and extreme expressionism that had characterized much of the early twentieth century’s musical avant-garde’ (Bonds 2014, 262).<sup>144</sup> The detachment of *Neue Sachlichkeit* and the atonality of the Viennese School coincided with the developments in painting toward abstraction. Hanegraaff has added that esoteric speculation has also played a role in the breakthrough from late Romanticism to modernity in music (Hanegraaff 2013, 153).<sup>145</sup> For the purpose of this research, however, the most interesting aspect was the reconnection of music with ancient cosmology.<sup>146</sup> Paul Hindemith (1895-1963) dedicated an opera to the theme of a musical cosmos as perceived by Johannes Kepler, influenced by the writings of Hans Kayser (1891-1964), who spearheaded a revival of Pythagoreanism in the 1920s (Bonds 2014, 295).<sup>147</sup> Bonds mentions Charles Ives, Karlheinz Stockhausen, George Crumb, John Cage and Iannis Xenakis as other composers who were attracted to the idea of translating the order of the cosmos to music. However, that development did not lead to a new philosophy of music, expressing a Pythagorean-Platonic cosmology. Bonds thinks that in fact the old idea of absolute music became so central to Western aesthetics after the Second World War, that its development from that point onward cannot be distinguished from the broader sweep of musical aesthetics in general (Bonds 2014, 297). Bonds argues that the prestige of the idea of a wholly autonomous art, free from all contingencies, only began

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<sup>144</sup> Robert Lustig points at the reaction against absolute music that set in around the turn of the century in music itself, by the growing use of quotation and re-composition, new forms of musical structures, serial techniques or deliberate flouting of conventions (Robert Lustig in Dahlhaus 1978, ix).

<sup>145</sup> Hanegraaff mentions Schönberg’s fascination with the Jewish kabbalah, Webern’s devotion to Goethe’s speculative theories of plant morphology and colours, Swedenborg’s theory of correspondences as a crucial source of inspiration in the conceptualization of dodecaphony as a universal system for organizing ‘musical space’ (Hanegraaff 2013, 153).

<sup>146</sup> Gustav Mahler is reported to have said that “a symphony must have something cosmic about it; it must be inexhaustible like the world and life, if it is not to make a mockery of its name” (Bonds 2014, 294).

<sup>147</sup> Other writers in the Pythagorean tradition are Antoine Fabre d'Olivet (1767-1825), Thomas Taylor (1758-1835), Albert von Thimus (1806-1878), Hans Kayser and Rudolf Haase (1920, founder of the Hans Kayser Institute for Basic Research in Harmonics, Vienna).

to decline around 1970 (ibid., 298). I suppose that may be true for the world of classical music, but by the 1970s it was quickly overtaken by popular culture. The question arises whether this decline can be connected to the resurgence of the ancient worldview, in which everything is connected through sympathetic resonance, and nothing except the totality can be absolute. Bonds does not answer that question, but I will come back to it in the following two chapters.

### *Nietzsche's premature birth*

The supposed gap between the culture of antiquity and the 'disclosiveness' of music was bridged in another way by Friedrich Nietzsche (1844-1900) in his first publication *Die Geburt der Tragödie aus dem Geiste der Musik* (1872).<sup>148</sup> Nietzsche was a classical philologist, an amateur composer, a philosopher and a close friend of Richard Wagner. Although his compositions are not in the same class as his writings, they certainly display genuine musicality and thus we may assume that he had a direct grasp of music, distinct from any intellectual understanding. In the *Birth of Tragedy* however, it is Nietzsche the classicist who is speaking. As the opening lines of the book make clear, Nietzsche wanted to convince his reader that Attic tragedy, before the time of Socrates, was the result of the successful coupling of the 'Apolline' and the 'Dionysiac', the divine powers of the visual and the musical (Nietzsche 1993, 14). Nietzsche's gods seem almost real and his interpretation of the ancient world is deeply religious. He connected the Apolline to the 'dream' of the *principium individuationis*, and the Dionysiac to the 'intoxication' or 'ecstasy' of the mysterious primal Oneness of nature (ibid., 16-17).

Nietzsche severely criticized Socrates for his lack of creativity, poetry, and mysticism, and for not allowing Dionysiac art as the correlative and supplement to Apolline science (ibid., 66-71). He argued that it is an illusion to believe that rational thought can penetrate the depths of being, and that it has to renounce its claim to universal validity, and make way for myth and art (ibid., 73).<sup>149</sup> By looking beyond philosophy to the cults and the mystery religions of antiquity, Nietzsche opened up a new vista on the metaphysics of music. Scanning history for a 'rebirth of tragedy', he invoked 'the most important insight' of Richard Wagner, following the philosopher Arthur Schopenhauer (1788-1860),

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<sup>148</sup> The English translation I have used is by Shaun Whiteside (Nietzsche 1993).

<sup>149</sup> Nietzsche even speaks of the rebirth of tragedy by a 'music-making Socrates' (Nietzsche 1993, 82).

presenting music as differing from all the other arts, because it does not replicate phenomena but represents the thing-in-itself, the metaphysical, that which soon came to be known as absolute music (ibid., 76). Nietzsche quoted Schopenhauer writing that 'we might just as well call the world embodied music as embodied will' and presenting the composer as having 'the immediate knowledge of the inner nature of the world unknown to his faculty of reason' (ibid., 78-79).<sup>150</sup> From there, Nietzsche concludes: 'Thus Dionysiac art tends to exert two kinds of influence on the Apolline artistic faculty: music encourages a *symbolic intuition* of Dionysiac universality, and then endows that symbolic image with *the highest level of significance*' (ibid., 79). The depth of this vision pointed far beyond the topic of music, and seems to resonate with Jungian psychology. However, Nietzsche (and Wagner) considered the human fate as tragic, because 'absolute music finds its meaning in death' (Chua 1999, 232).

Nietzsche believed that the Dionysiac art of music addresses us with the voice of nature, 'eternally creative, eternally impelling into life, eternally drawing satisfaction from the ceaseless flux of phenomena' (Nietzsche 1993, 80). He argues that the Renaissance recitative and opera were born from an 'amateur, unmusical crudeness' to produce 'a fantastically silly dalliance' (ibid., 91-93). But now, he declares in 1872, 'from the Dionysiac soil of the German spirit a power has risen': (...) '*German music*, as we know it pre-eminently in its mighty sun-cycle from Bach to Beethoven, from Beethoven to Wagner' (ibid., 94). Likewise, he sees 'through Kant and Schopenhauer the spirit of *German philosophy* as *Dionysiac wisdom* in conceptualized form (ibid., 95). Nietzsche's faith in a rebirth of Hellenic antiquity as a new age of German art now sounds rather naïve, and he thought so himself later in life. Joscelyn Godwin has argued that all orchestral or classical music appears to be Apolline, and the Dionysiac has only recently been revived through jazz and world music (Godwin 1987, 102). Yet at the time Nietzsche's arguments yielded important new insights into the metaphysics of art. The

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<sup>150</sup> According to Bonds, Schopenhauer came close to Pythagoreanism by regarding 'the phenomenal world, or nature, and music as two different expressions of the same thing'; he is quoted saying that 'music is an unconscious exercise in metaphysics in which the mind does not know it is philosophising' (Bonds 2014, 290-291).

idea of the Dionysiac in music is an addition to the metaphysics of music that steps beyond the Pythagorean-Platonic model, and points both forward to the future and back to a pre-Socratic age.<sup>151</sup> Later in life, Nietzsche aspired to express the union of the Apolline and the Dionysiac in his book *Also Sprach Zarathustra*, which inspired Richard Strauss to compose a tone-poem with that title. Stanley Kubrick used the music in his popular 1968 film *2001: A Space Odyssey*, based on the ideas of Sir Arthur C. Clarke about the evolutionary shift of humankind to a new level of consciousness.

### *Scriabin*

The idea of absolute music, as it emerged in the writings of Hanslick, and the image of the composer as presented by Nietzsche, suggest the development of a cult of music, that gradually lost its connection to the natural world, both in the human and cosmic sense. To illustrate that development, I would like to turn to the Russian composer Alexander Scriabin (1872-1915). The new status of the composer as a divine oracle was not lost on Scriabin, who sought a union of music, poetry, colour, ritual and the spiritual wrapped around the central concept of the deification of the human soul.<sup>152</sup> He absorbed practically every contemporary spiritual trend, from Theosophy, Hindu philosophy, and Nietzsche to Russian Orthodoxy. In the last years of his life, just before the first world war, Scriabin worked on a multi-media work titled *Mysterium*, to be performed in the Himalayas. Godwin writes that the effects of the *Mysterium* were to exceed by far any Wagnerian ambitions: 'beginning with the enlightenment of its beholders, it would spread worldwide to bring about the Apocalypse and usher in the New Age' (Godwin 1987, 34). When asked how beautiful it must be to believe in such a great mission and such a great event, Scriabin answered: 'I do not *believe* in it, but I *know* it to be true' (Greville 1924, 178). However, the project did not get any further than some sketches. Although Scriabin is generally respected as a composer, his private life was problematic.

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<sup>151</sup> When he writes that 'the pleasure produced by the tragic myth has the same origin as the pleasurable perception of dissonance in music', it implies that dissonant music steps beyond the one-sided Pythagorean-Platonic (Apolline) esthetical doctrine based on perfect fifths (Nietzsche 1993, 115).

<sup>152</sup> Suzannah Clark observes that 'perhaps the most influential line of thought to evade post-Newtonian science was the doctrine of 'organicism', rooted above all in the work of such thinkers as Coleridge, Schelling and Goethe (Clark 2001, 8-9). For the organicists, nature revealed itself to the composer, and to him only: this was the birth of the genius, who was instinctively and unconsciously in touch with nature (Clark 2001, 11). The genius-artist was sometimes even believed to be creating against his will, nature thus not so much being a source of inspiration as a force of inspiration (Clark 2001, 11-12).



Antony Copley sees him as an 'unreconstructed narcissist', but his music as 'an eschatological revelation, a gnosis that only music can impart: the full collapse of time and space in the dissolution of the ego' (Copley 2012, 73-74).

### *The esoteric echo*

Scriabin's music is linked to other fields of knowledge, namely Western esotericism and spirituality, which absorbed the musical cosmology of the ancient world in the nineteenth and twentieth centuries.<sup>153</sup> To complement the story of absolute music in the Romantic era, I will examine the ideas of Rudolf Steiner and Hazrat Inayat Khan, both active at the end of the Romantic era in establishing a movement that engaged with music, absorbing ancient ideas.<sup>154</sup>

After breaking away from the theosophical movement, Rudolf Steiner (1861-1925) established the Anthroposophical Society, which, according to Hanegraaff, was based upon 'a Christian interpretation of theosophy bolstered by Steiner's claims of superior clairvoyant access to the spiritual world, against a background of philosophy in the German idealist tradition' (Hanegraaff 2013, 41). In his lectures, Steiner explained how man can experience a world of inner music through concentration, meditation, lucid dreaming and the so-called 'great stillness'.<sup>155</sup> The essential element of this 'devachanic' world (a theosophical term) is the 'endlessly flowing and changing ocean of musical tones'. Steiner said that

Each time the human being falls asleep and loses consciousness, his astral body emerges from his physical body. In this state man is certainly unconscious but

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<sup>153</sup> For an excellent introduction, see Wouter J. Hanegraaff (2013) *Western Esotericism. A Guide for the Perplexed*.

<sup>154</sup> Worth mentioning as another esoteric engagement with music and dance, are the teachings of Georges Ivanovitch Gurdjieff (1877-1949), who studied with Hindu, Buddhist and Sufi masters. He taught that objective art aims to bring the observer into a transcendent experience. Mitzi DeWhitt has written a delightful book on the Pythagorean side of Gurdjieff's teachings (DeWhitt 2006). Another modern author based to large extend on Gurdjieff's musical teachings is Michael Hayes, who claims to have found a universal formula, the Hermetic Code, based on the number 64 as nine octaves (Hayes 2008, 19). See also David Hykes (2011) *Music of the Spheres and the Harmonics of Being: The Search for Awakened Listening*. Source: [www.gurdjieff-internet.com/article\\_details.php?ID=368&W=73](http://www.gurdjieff-internet.com/article_details.php?ID=368&W=73). Accessed 18/04/2017.

<sup>155</sup> On inner music, Marko Ciciliani writes: 'What our ear perceives is only part of what we hear. Our memory and imagination are constantly adding to what reaches our ears. In fact, a musical experience does not rely on its acoustic presence' (Ciciliani 2012).

living in the spiritual world. The spiritual sounds make an impression on his soul. The human being awakens each morning from a world of the music of the spheres, and from this region of harmony he re-enters the physical world. (Steiner 1983, 5).

From his words, it appears that Steiner had experienced cosmic music, perhaps on the threshold of death.<sup>156</sup> Steiner is expressing the paradoxical nature of cosmic music by saying that he is speaking both figuratively and literally, a stage of perception where the two are one, and the spiritual world is directly perceived as the physical world (Steiner 1983, 41-43). Elsewhere Steiner refers to this in terms of the Pythagorean music of the spheres (Steiner 1920, 86). Joscelyn Godwin sees Steiner as

the visionary who provides the key to the mysteries of music which others have only hinted at. With his lectures, esoteric music theory finally becomes exoteric, for they provide a context in which many of the older ideas at last become comprehensible (Godwin 1986, 252).

To Godwin, Steiner's Anthroposophical Movement is a place 'where music therapy at every level is accorded its full value and flourishes in an atmosphere of complete acceptance' (Godwin 1987, 31). He argues that music provides one of the clearest approaches to the spiritual world, which every soul is to enter at some time in full consciousness; music hence has value for reawakening the soul's prenatal knowledge (ibid.). As a follower of Steiner, Godwin gives a truly revealing explanation of the confrontation with absolute music and anthroposophical belief in the hereafter in following passage:

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<sup>156</sup> Steiner: 'When man has passed through the portal of death, he passes at the same time from the earthly world into the world of the stars. Though it appears that I am speaking figuratively, this description is a reality. Imagine the earth, surrounding it the planets, and beyond them the fixed stars, which are traditionally pictured, for good reason, as the Zodiac. ... From all these heavenly bodies it sings to you in speaking, speaks in singing, and your perception is actually a hearing of this speaking-singing, singing-speaking. When you look toward the constellation of Aries you have a soul-consonant impression. Perhaps you behold Saturn behind Aries: now you hear a soul-vowel. In this soul-vowel element, which radiates from Saturn into cosmic space, there lives the soul-spiritual consonant element of Aries or Taurus. You therefore have the planetary sphere that sings in vowels into cosmic space, and you have the fixed stars that ensoul this song of the planetary sphere with consonant elements. Vividly picture the more serene sphere of the fixed stars and behind it the wandering planets. As a wandering planet passes a constellation of fixed stars, not just one tone but a whole world of tones resounds, and another tone world sounds forth as the planet moves from Aries to Taurus. Each planet, however, causes a constellation to resound differently. You have in the fixed stars a wonderful cosmic instrument, and the players of this instrument of the Zodiac and fixed stars are the gods of the planets beyond' (Steiner 1983, 41-43). Vowel sounds are made by unimpeded breath (Crowe 2004, 164). Godwin studied the sacred vowels in *The Mystery of the Seven Vowels*. Grand Rapids MI: Phanes Press (1991).

Whoever is in love with Music is in love with Death. The deepest experience of music, like the climax of love, is a self-forgetting, a replacement of the ego by the state of ecstasy: a condition of perfect presence and perfect concentration — concentration without effort, presence without a person to be present. One can say nothing about the nature of music in this ideal state of annihilation, except that it has very little to do with anything generally associated with music: there are no instruments, no singers, no keys, scales, no sense of high or low, no emotion (for that requires a person to be moved, and a place to be moved to). The music is; and it is all that is. Whatever it does, is right. It moves without moving in a space without dimensions. All one can be entirely certain of is Time, for there is change in this world. And yet there is something beyond it still: for occasionally a silence peeps through the music, and with that silence a glimpse of yet another order of being. When the music ceases, this Other is revealed. If the music was spaceless, this is timeless, too. When the music stops, time may, just possibly, stop for a moment, and then annihilation is complete: no individual, no music, nothing. The purpose of music is to lead us, time and again, to the threshold of this Void, in the hope that one day we will be strong enough to step across it. We practise through music during life in order that when we die we may catch that ever-open door, that needle's eye, and willingly leave behind all that we are to vanish through it. (Godwin 1985, 75) <sup>157</sup>

Steiner believed that the soul-evolution of mankind can be described as an unfolding of musical consonances, the larger consonances as surrender to the spiritual world and the smaller ones to corporeality. Steiner's student Hans Erhard Lauer (1899-1979) has worked the idea out in *The Evolution of Music Through Changes in Tone-Systems* (1935) (Godwin 1989, 168-225).<sup>158</sup> Steiner's ideas have been advocated by the anthroposophical educational institutions, up to the present.

With the impact of the teachings of Hazrat Inayat Khan (1882-1927), I come to the beginning of a new era, when ideas and music from the East gradually entered the West.<sup>159</sup> Born in India, Khan came to the West in 1910 as a musician, introducing classical Indian music to audiences including Debussy and Scriabin (Lobanova 2011, 65). He soon

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<sup>157</sup> Godwin has also written that 'the best of Romanticism is philosophy in action, energized as Plato believed it should be – through the Eros of beauty'. See Godwin, J. (2007) *The Golden Thread*. Wheaton IL: Quest Books, 131.

<sup>158</sup> Other anthroposophical writers on music include Anny von Lange (1992), Heiner Ruland (Ruland 1992), Max Heindel, and Corinne Heline. See also Godwin (1987, 143).

<sup>159</sup> On Khan's life, see Elisabeth Keesing (1974) *Inayat Khan: A Biography*. London UK: East-West Publications Limited.

started the movement of 'Universal Sufism', a universalist approach to mysticism originating in Islam, adapted to the Western mind. His teachings are a mix of Hindu, Islamic and Pythagorean ideas. In order to teach, he abandoned the practice of playing the *vina*, an Indian stringed instrument, 'to tune souls instead of instruments, to harmonize people instead of notes' (Khan 1991, prologue). He writes that 'healing through music is in reality the beginning of development through the art of music, the end of which is attaining that which in the words of the Vedanta is called *samadhi* [stillness, presence]' (Khan 1991, 103). In Khan's philosophy, nature is full of harmony.<sup>160</sup> This includes 'the movements of the stars and planets, the laws of vibration and rhythm – all perfect and unchanging – it shows that the cosmic system is working by the law of music, the law of harmony' (Khan 1991, 13). Khan proclaims a meta-reality of vibration, manifested in the music of the spheres, which is the source of creation (Khan 1991, 20). To hear this music is to experience 'at-one-ment with the Absolute' (Khan 1991, 16). Here Khan departs from traditional Islamic theology, which is often critical of music as entertainment. According to Marina Lobanova, this concept of musical ecstasy is mirrored in Scriabin's composition 'The Poem of Ecstasy' (*Le Poème de l'extase*), op. 54 (1908) (Lobanova 2011, 66).

Khan's teaching involves interiorisation of the sounds of a musical *Raga*, seeking solitude, practising mystical breathing and raising the soul to God (Khan 1991, 23). The vibrations of this sound are too fine to be audible to the material ears (Khan 1991, 170). This unlimited sound brings all-pervading consciousness to the soul of the listener. It develops in ten forms, like 'thunder, the roaring of the sea, the jingling of bells, running water, the buzzing of bees, the twittering of sparrows, the *vina*, the whistle, the sound of *shanka* [ritual conch shell] – until it finally becomes *Hu*, the most sacred of all sounds' (Khan 1991, 171). In 1922 Khan wrote that 'time is wanted for this, but there will come a day when music and its philosophy will become the religion of humanity' (Khan 1991, 8). To Khan,

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<sup>160</sup> 'What appeals to us in being near to nature is nature's music, and nature's music is more perfect than that of art. It gives us a sense of exaltation to be moving about in the woods, to be looking at the green, to be standing near the running water which has its rhythm, its tone and its harmony. The swinging of the branches in the forest, the rising and the falling of the waves – all has its music. Once we contemplate and become one with nature, our hearts open to its music. We say: 'I enjoy nature', and what is it in nature that we enjoy? It is its music. Something in us has been touched by the rhythmic movement, by the perfect harmony which is so seldom found in this artificial life of ours. It lifts one up and makes one feel that it is this which is the real temple, the true religion' (Khan 1991, 12).

music in itself is a universal religion, finer than other arts and sciences because it does not produce name or form, thus preparing the soul to realize the infinite, to achieve the ecstasy of union with the divine Beloved, which language can never express (Khan 1991, 167; 169).

The tension between the idea of absolute music, as it developed in the nineteenth century from the orchestral repertoire, and the monodic music of the Sufi movement, was resolved in the compositions of Khan's son Hidayat Inayat-Khan (1917-2016), who wrote several works for symphony orchestra, incorporating Indian *Ragas* (Lobanova 2011, 66). The International Sufi Movement was led by various members of Inayat Khan's family, the present being his grandson Pir Zia Inayat Khan (b. 1971).

### *Tavener and the sacred*

Scriabin was also influenced by the monodic music of the Russian Orthodox Church. In this he may be seen as a precursor of the 'new contemplative music' of the late twentieth century, associated with the composers Henryk Górecki (1933-2010), Arvo Pärt (b. 1935) and John Tavener (1944-2013). To facilitate a reconnection to spirituality in music, these composers turned for inspiration to ancient musical forms that pre-dated Romantic music, such as Gregorian and Byzantine plainchant, medieval polyphony, and sacred music of non-European cultures. Instead of practising music as an autonomous art, these composers were creating musical prayers in a spiritual tradition. John Tavener wrote: 'I totally believe that the only way to write music is for the music to be revealed. An eschatological dimension begins to well up inside me' (Tavener 1999, 122). For Tavener, 'from both a Christian and Platonic point of view, (...) all music already exists. When God created the world, he created everything. It's up to us artists to find that music' (Tavener 1999, 73). 'Sacred music', he wrote, 'must be able to be in some way sung, because from a Christian point of view the Word must be heard. Music is the extension of the Word, not a frilly decoration of the Word. It is at the service of the Word, as in all great traditions. There must be no harmony, no counterpoint, just a single melodic line with an *ison*, or the tonic note of the melody, representing eternity' (Tavener 1999, 47). It is surprising to see how absolute music is here firmly positioned in the service to a sacred text, a complete reversion of Hanslick's intentions. I am inclined to see Tavener's music as the 'classical' version of New Age music, which is the subject of chapter 9, because of the explicit functionality of music. For both, music aims at restoring the individual to its

proper place in the cosmos; for Tavener that place is within religion, for New Age it is within nature.

## 8. The rediscovery of the world soul

The tantalizing implication of quantum nonlocality is that the entire universe, which is thought to have blazed forth from the first light of the big bang, is at its deepest level a seamless holistic system in which every “particle” is in “communication” with every other “particle,” even though separated by millions of light years. In this sense, experimental science seems to be on the verge of validating the perception of all mystics - Plotinus included - that there is an underlying unity to the cosmos which transcends the boundaries of space and time.

(David Fideler *Cosmology, Ethics, and the Practice of Relatedness: A Conversation on Philosophy, the Patterns of Nature, and the Ways of Knowing*; 1997, 144-145)

In this chapter, I follow a set of developments in thought and music of the twentieth century, connected to a new relevance of cosmic music. I see it as a slow change in attitude in philosophy, that involved a rediscovery of what the ancients had called ‘the soul of the world’, that is the natural world as somehow sentient, alive and divinely ordered.<sup>161</sup> In psychology, this development was represented by theories of the ubiquity of consciousness; in philosophy, by holism; in new physics, by stepping beyond mechanistic science.<sup>162</sup> The most sweeping change in the music of the twentieth century was the rise of popular music, which in the late 1960s sent out a strong message of change. Most of the themes of these developments were already apparent at the end of the nineteenth century or the beginning of the twentieth century. While the world was gradually becoming smaller through technological advances, especially after the Second World War, these ideas became global issues as never before in the history of humankind.

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<sup>161</sup> James Hillman thinks that ‘an idea of the idea of the soul of the world runs through all Western thought, to say nothing of archaic, primitive, and oriental cultures. (...) It is affirmed in different ways in Plato, the Stoics, Plotinus, and in Jewish and Christian mystics; it appears splendidly in the Renaissance psychology of Marsilio Ficino, in Swedenborg; it is revered in Mariology, Sophianic devotion, in the Shekinah. We find notions of it in German and British Romantics and American transcendentalists; in philosophers of various sorts of panpsychism from Leibniz through Peirce, Schiller, Whitehead, and Hartshorne. The world of soul returns also in the pluralistic position of William James, through his interest in Fechner and his concern for “the particular, the personal, and the unwholesome”. Or the “eachness” of events rather than abstracted wholes. Anima mundi reappears in further guises as “the collective” in Jung, as physiognomic character in the Gestalt psychology of Merleau-Ponty, of van den Berg, in the poetics of matter and space in Bachelard, and even in Roland Barthes, and of course, ever and again in the great poets, specifically of this century in Yeats and Rilke and Wallace Stevens’ (Hillman 1992, 127-128).

<sup>162</sup> The term ‘holism’ was used for the first time in 1926 by Jan Smuts, expressing what he saw as the tendency in nature to form wholes that are greater than the sum of the parts through creative evolution.

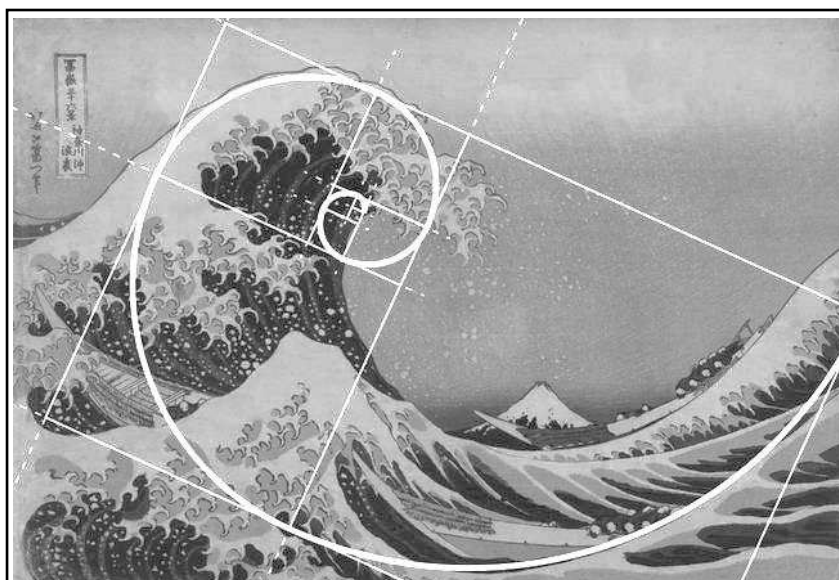


Figure 11: Hokusai's  
Wave: Golden Spiral

<https://uk.pinterest.com/pin/257338566187401023>)

### *The music of earth and sea and sky*

In orchestral music, this change in attitude was heralded by a search for a different approach to composition than the Romantic tradition, and its love of Germanic mythology. In an attempt to shake off the influence of Richard Wagner, French composers of the late nineteenth century turned to 'impressionism', which looked for inspiration to sensuality, nature, antiquity and the Orient. Dreamy, mysterious, erotic qualities sought to realign consciousness through music. As French composer Claude Debussy (1862-1918) wrote: 'we should constantly be reminding ourselves that the beauty of a work of art is something that will always remain mysterious; that is to say one can never find out exactly "how it is done."' At all costs let us preserve this element of magic peculiar to music' (Claude Debussy, music journal article, 1903; Strunk 1998, 1436). Many of Debussy's later compositions display ordering by Fibonacci numbers to construct golden section spirals, as Roy Howat has convincingly shown (Howat 1983).<sup>163</sup> Debussy was interested in ancient philosophy and had contacts with the esoteric movements of his day, including the Sufi movement (Howat 1983, 163-169). The first edition of *La Mer*, Debussy's symphonic masterpiece in reverence of the sea (1905), appeared with a reproduction on the cover, at Debussy's request, a detail from from Katsushika Hokusai's print *The hollow of the wave off Kanagawa*, which features a logarithmic spiral (Howat

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<sup>163</sup> See also Robert Lawlor (1982) *Sacred Geometry*; Keith Devlin (2011) *The Man of Numbers. Fibonacci's Arithmetic Revolution*.



1983, 178) (figure 11). *La Mer* is full of the sacred geometry of spirals and vortexes, of which Debussy was well aware, if he didn't consciously plan them (Howat 1983, 7).

*The Song of the Earth* (*Das Lied von der Erde*, 1909) was the title of a symphonic song-cycle by the Austrian composer Gustav Mahler (1860-1911). The title was deliberately paradoxical; at the time, a *Lied* was the opposite of a symphonic work. Mahler tried to combine the full force of a large symphony orchestra with the intimacy of vocal monody. In the last years of his life, Mahler turned to ancient Chinese poetry of the eighth century CE, on mankind's sorrow and the brevity of human life (La Grange 2004).<sup>164</sup> Mahler suggested features of Chinese music with his orchestration, like pentatonic scales and 'Chinese' instruments (mandolin, harp, winds and tambourine). According to the Mahler scholar Henry-Louis de La Grange, 'in the final 'Abschied' of *Das Lied von der Erde*, a breath of consolation and peace wafts over man as he longs to merge with the eternity of nature blossoming anew each spring'. This monument of Romantic music thus contained elements of a new direction in music, including Eastern philosophy, world music, and monody.

No sense of consolation was present, however, in *Le Sacre du Printemps* (The Rite of Spring, 1913) by the Russian composer Igor Stravinsky (1882-1971), a ballet with grand orchestra, inspired by a violent, primitive Russian sacred ritual of earth's regeneration. The *Sacre* sent a shockwave through the musical world. It is generally considered to be one of the most influential compositions of the twentieth century, marking a transition to expressionism. The *Sacre* added dissonance, innovative timbres, and complex, violent rhythms to the elements of this new direction in music.

The British composer Gustav Holst (1874-1934) portrayed the seven planets of astrology in the orchestral suite *The Planets* of 1914. Holst was inspired by the revival of interest in astrology, originating in the esoteric Theosophical movement.<sup>165</sup> In comparison to the other composers I have presented, Holst did not contribute to a break with Romantic

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<sup>164</sup> 'Die liebe Erde allüberall blüht auf im Lenz und grunt / Aufs neu! Allüberall und ewig blauen licht die Fernen! / Ewig... ewig...' (Gustav Mahler *Das Lied von der Erde*, VI: *Der Abschied*; Universal Edition 1911).

<sup>165</sup> See Bessie Leo and Annie Besant (1919) *The Life and Work of Alan Leo: Theosophist—Astrologer—Mason*. London: Modern Astrology Office.

Source: <https://archive.org/stream/lifeworkofalanleo00leob#page/n7/mode/2up>. Accessed 24/02/2017.

stylistics. However, as programme music the piece became extremely popular, because the psychological interpretation of the planetary gods spoke to the imagination of many, and still does. If Holst had used a different title, the piece would probably not have attracted much attention. After the Second World War, many musicians have made music inspired by the stars.<sup>166</sup> Obviously, the subject was increasing in popularity.<sup>167</sup>

These works from the beginning of the twentieth century reflected the search for new forms, new sounds and new subjects in the tradition of orchestral music in the West, which signalled a departure from Romanticism.

### *Cosmic Consciousness*

I now switch from music to the new developments in transpersonal psychology of the twentieth century, which are crucial for a reflexive re-reading of the idea of cosmic music. I assume the new trends in music to be part of a change in the direction of consciousness of musicians and their audiences, connected to an awakening to the sacredness of the natural world. Steve Taylor, in his study of the psychology of spiritual awakening, traces the occurrences of such collective shifts of consciousness (or ‘awakening’) in a number of waves, starting around three thousand years ago, and followed by a wave in the second half of the eighteenth century (Taylor 2017, 258).<sup>168</sup> He writes that ‘the first ever psychological study of the wakeful state’ was conducted by the Canadian psychiatrist

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<sup>166</sup> For instance, Mary Lou Williams (1910-1981): *Zodiac Suite* (1945); Harry Partch (1901-1974): *Castor and Pollux* (1952); Paul Hindemith (1895-1963): *Die Harmonie der Welt* (1957); György Ligeti (1923-2006): *Atmospheres* (1961); Morton Garson (1924-2008): *Zodiac* (1967); Rolling Stones: *2000 Lightyears From Home* (1967); Humphrey Searle (1915-1982): *Zodiac Variations*, Op. 53 (1970); Nat Adderley (1931-2000): *Soul Zodiac* (1972); George Crumb (1929-): *Makrokosmos* (1972-1979); Per Nørgård (1932-): *Libra* (1973); John Cage (1912-1992): *Etudes Australes* (1975); Karlheinz Stockhausen (1928-2007): *Tierkreis* (1975); Claude Vivier (1948-1983): *Orion* (1979); Urmas Sisask (1960): *Zodiac* (1994); John Tavener (1944-2013): *Eternity's Sunrise* (1997); John Adorney (1953): *Dance of the Moon and Stars* (1998); Joep Franssen (1955): *Harmony of the Spheres* (2001); Philip Sparke (1951): *Music of the Spheres* (2004); Mike Oldfield (1953): *Music Of The Spheres* (2008).

<sup>167</sup> See also Dane Rudhyar (1982) *The Magic of Tone and the Art of Music*. Boulder: Shambhala.

<sup>168</sup> Hanegraaff writes: ‘A central concern of transpersonal psychology lies in developing ‘maps’ of the mind which explain the dynamics of consciousness within a comprehensive framework, encompassing the complete spectrum from unitive consciousness to the limited ego’ (Hanegraaff 1998, 246). Steve Taylor argues that ‘as we wake up, our identity opens up, expands outward. It incorporates and encompasses wider realities. It expands into other people, other living beings, the natural world, the earth itself, until eventually it encompasses the whole cosmos’ (Taylor 2017, 245).

Richard Maurice Bucke (1837-1902) and published in 1901 as *Cosmic Consciousness: A Study in the Evolution of the Human Mind* (Bucke 2009; Taylor 2017, 48). In 1872, while in London, Bucke had a religious experience of what he called 'cosmic consciousness'.<sup>169</sup>

Bucke relates this in the third person:

He found himself wrapped around as it were by a flame-coloured cloud. For an instant he thought of fire, some sudden conflagration in the great city; the next, he knew that the light was within himself. Directly afterwards came upon him a sense of exultation, of immense joyousness accompanied or immediately followed by an intellectual illumination quite impossible to describe. (Bucke 2009, 10).

The experience meant to Bucke that the 'Cosmos is not dead matter but a living Presence, that the soul of man is immortal, that the universe is so built and ordered that without any peradventure all things work together for the good of each and all, that the foundation principle of the world is what we call love' (Bucke 2009, 10). Subsequently Bucke developed a sweeping theory of the nature of consciousness across all races and religions, and its historical evolution to a new global level based on cosmic consciousness, which Bucke projects into the future.<sup>170</sup> Bucke distinguishes three planes: simple consciousness which we share with animals; self-consciousness that is characteristic of man; and cosmic consciousness, which provides an enormously greater capacity both for learning and initiating (Bucke 2009, 76). Bucke presents a 'golden thread' of men, whom he considers have reached or approached the cosmic level of consciousness, beginning with the Buddha. There is a strong influence of Bucke's friend, the poet Walt Whitman. His theory embraces the Platonic concept of the immortality of the soul and a strong pantheist god-image.<sup>171</sup> With Bucke, cosmic consciousness entered the science of psychology.

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<sup>169</sup> Bucke probably borrowed the term 'cosmic consciousness' from his friend the British writer Edward Carpenter (1844–1929), who had travelled and studied Hinduism in India (Kripal 2010, 84).

<sup>170</sup> Bucke on the Cosmic Conscious race: 'This new race is in act of being born from us, and in the near future it will occupy and possess the earth' (Bucke 2009, 384).

<sup>171</sup> Cosmic 'consciousness shows the cosmos to consist not of dead matter governed by unconscious, rigid, and unintending law; it shows it on the contrary as entirely immaterial, entirely spiritual and entirely alive; it shows that death is an absurdity, that everyone and everything has eternal life; it shows that the universe is God and that God is the universe, and that no evil ever did or ever will enter it' (Bucke 2009, 17).

### *Out of your head*

The two main developments in science that I will follow from Bucke's experience to the second half of the twentieth century are the theory of the ubiquity of consciousness, and the theory of the material world having mental aspects. They are, of course, interconnected; it is just a question of starting research from the human, or the inanimate. The first approach became one of the central questions of transpersonal psychology. Bucke influenced William James (1842-1910), who has often been called the 'Father of American psychology'.<sup>172</sup> James subscribed to the theory of cosmic consciousness as a continuum of super-human intelligence, 'into which our several minds plunge as into a mother-sea or reservoir' (James in Skrbina 2005, 149). He thought the role of the brain was not *productive* of consciousness but *permissive* or *transmissive*. This theory is often called the 'filter model'.<sup>173</sup> James conceived of the connection between the mind and the body in terms of a 'stream of consciousness'. James was deeply convinced that the filter model is compatible with the possibility of post-mortem survival of individual consciousness, as part of the soul of the world, in a 'pantheistic' sense (Kelly 2007, 591-592).<sup>174</sup>

The British researcher of paranormal phenomena Frederic Myers (1843-1901) presented what is, so far, the most thoroughly worked out and empirically grounded version of the filter model (Kelly 2007, 73). The engine that drove all of Myers' thinking and work was his passionate desire to learn whether or not individual consciousness survives death (Kelly 2007, 61, 72).<sup>175</sup> At sixteen Myers read Plato's *Phaedo*, which effected a kind of conversion upon him (Kripal 2010, 38). Later in life Myers turned to Christianity and Darwinism before he came to his own convictions about life after death. In 1882 Myers

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<sup>172</sup> See James, William James (1985) *The varieties of religious experience*. Cambridge, Mass: Harvard University Press. Original from 1902. On mystics, he said that 'they have had their vision and they know – that is enough- that we inhabit an invisible spiritual environment from which help comes, our soul being mysteriously one with a larger soul whose instruments we are (James *A Pluralistic Universe*, quoted in Kelly 2007, 593).

<sup>173</sup> James was aware that the philosophers Immanuel Kant (1724-1804) and Ferdinand Schiller (1864-1937) had proposed similar theories, and one may go back to Plato; a definitive history of the filter model is yet to be written (Kelly 2007, 28-29).

<sup>174</sup> On pantheism, see Timothy Sprigge (1997) 'Pantheism'; and below.

<sup>175</sup> Kripal has speculated that an erotic desire for reunion with Annie Hill Marshal, who had committed suicide in 1876, provided the spiritual fuel (Kripal 2010, 90).

coined the term telepathy, which included communications between the living and the dead (Kripal 2010, 79-80). In 1903, his book *Human Personality and Its Survival of Bodily Death* was published posthumously. It presents Myers' research into what he called the 'Subliminal Self' in 1360 pages, often based on sessions with psychic mediums.<sup>176</sup>

The 'Subliminal Self' is the key concept of Myers' theory. He came to the conclusion that the self of which we are aware is only a segment of a larger Self (Kelly 2007, 76). Myers did not consider our *supraliminal* consciousness superior to the *subliminal*, which could be *sub*-conscious as well as *super*-conscious; the 'Subliminal Self' could suddenly open out into a vast psychical sea (Kripal 2010, 63). In the words of the Cambridge philosopher C.D. Broad:

Each person is at each moment capable of remembering all that has ever happened to him and of perceiving everything that is happening everywhere in the universe. The function of the brain and the nervous system is to protect us from being overwhelmed and confused by this mass of largely useless and irrelevant knowledge, by shutting out most of what we should otherwise perceive or remember at any moment, and leaving only that very small and special selection which is likely to be practically useful. An extension or modification of this type of theory seems to offer better hopes of a coherent synthesis of normal and paranormal cognition than is offered by attempts to tinker with the orthodox notion of events in the brain and nervous system generating sense-data. (Broad, quoted in Kelly 2007, 549-550).

The source of consciousness is thus placed outside the brain, in what Myers called the 'Subliminal Self', also known as 'Mind at Large' or 'Irreducible Mind'. According to Myers, our normal waking consciousness (*supraliminal*) reflects simply those relatively few psychological elements and processes that have been selected from that more extensive consciousness (*subliminal*) in adaption to the demands of our present environment; and

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<sup>176</sup> Within a few weeks after Myers' death in 1901, mediums in England, The United States and India received messages from a spirit claiming to be Frederic Myers. The Irish medium Geraldine Cummins received between 1924 and 1931 by automatic writing a complete description of the afterlife world from this spirit, filling some 250 pages. The style and content is consistent with writings we have from Myers. Some claim that the spirit of Frederic Myers, having spent so much effort on afterlife research while in the flesh, would be likely to attempt to communicate his experiences to the living from beyond. Cummins published the communications in two books, *The Road to Immortality* and *Beyond Human Personality*. It describes the seven Planes of Existence, beginning with the Plane of Matter. After death souls pause in Hades before entering the Plane of Illusion, and they may progress through the Planes of Colour, Pure Flame and Pure Light to the Monad in a state of timelessness (Cummins 1932, 5).

that the biological organism, instead of producing consciousness, is the adaptive mechanism that limits and shapes ordinary waking consciousness out of this larger, mostly latent, Self (Kelly 2007, 73). For Myers and James, we are not encapsulated within our skulls, but *open*, in some way profoundly interconnected with each other and with the entire universe (Kelly 2007, 562). In that sense, cosmic consciousness, 'Subliminal Self' and the 'filter theory' are all directly related to each other.<sup>177</sup> They provide reflexive re-reading of cosmic music with a new, contemporary framework.

### *Opening the doors of perception*

The British writer Aldous Huxley (1894-1963) contributed to the general knowledge of the filter theory with his essays *The Doors of Perception* (1954) and *Heaven and Hell* (1956), in which he reflected on his experiences of expanded consciousness under the influence of mescaline, taken in a controlled setting supervised by the psychiatrist Humphry Osmond (Huxley 1971). In the essay, he quotes C.D. Broad to describe the brain as *eliminative* instead of productive of consciousness. The concepts of language, Huxley writes, petrify, bedevil and reduce our perception of the world (Huxley 1971, 22). Looking at a flower arrangement, Huxley commented:

I was seeing what Adam had seen on the morning of creation – the miracle, moment by moment, of naked existence. ... The Being of Platonic philosophy – except that Plato seems to have made the enormous, the grotesque mistake of separating Being from becoming, and identifying it with the mathematical abstraction of the Idea. He could never, poor fellow, have seen a bunch of flowers shining with their own inner light and all but quivering under the pressure of the significance with which they were charged; could never have perceived that what rose and iris and carnation so intensely signified was nothing more, and nothing less, than what they were – a transience that was yet eternal life, a perpetual perishing that was at the same time pure Being, a bundle of minute, unique particulars in which, by some unspeakable and yet self-evident paradox, was to be seen the divine source of all existence' (Huxley 1971, 17).

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<sup>177</sup> The theory of Irreducible Mind has recently been presented in an 800-pages thick publication dedicated to Myers by the American psychologist Edward Kelly and his team (Kelly, 2007). Kelly stresses their research is not about the supernatural as things 'beyond' scientific knowledge, but about phenomena *not yet* understood.

The book was very influential in the 1960s in the United States, preparing the way for experiments of altered states of consciousness by using LSD. As I will argue in the next chapter, this had a strong impact on popular culture.<sup>178</sup> LSD also received serious attention from transpersonal psychology and contributed to the discipline of consciousness studies.<sup>179</sup> Huxley's criticism of Plato is interesting; apart from the question if it does justice to Plato's thought, it presents living nature as – paradoxically – expressing the absolute.

If consciousness does not have its source in the brain, then where? It is essential to stress that the filter model does *not* position the source of consciousness *outside* the world we live in but somehow *inside*, even if we cannot understand how. It is thus not metaphysics, nor a supernatural explanation, but a cosmological model resting on a new view of the universe, in which a noetic quality is seen as present to varying extent in humans, animals and other lifeforms, and by some even in objects and all matter. The filter theory, which had a strong impact on transpersonal psychology, thus connected the science of the human situation with the philosophy of nature and with physics. The implications for music, and cosmic music, are profound: if music has a noetic quality of its own, the making of music becomes an active partnership of the human and the musical entity, ranging from the instrumental to the cosmic.

### *Pan returns*

Bucke reported his experience showed him that the cosmos was 'entirely immaterial, entirely spiritual and entirely alive' and 'that the universe is God and that God is the universe' (Bucke 2009, 17). These remarks can be classified as expressing panpsychism

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<sup>178</sup> The rock band *The Doors* was named after Huxley's book.

<sup>179</sup> In analytical psychology, Carl Jung equated the alchemical concepts of Gerhard Dorn (c. 1530-1584) of the *unus mundus* with a union of psychological opposites, described as 'the potential world of the first day of creation, when nothing was yet "in actu," i.e., divided into two and many, but was still one' (Jung 1970, 534). Jung argued that the concept of the *unus mundus* could be traced back to Philo Judaeus and Plotinus. Marie-Louise von Franz has worked out these ideas in *Zahl und Zeit* (von Franz 1974). She pays little attention to music, from lack of specialized knowledge, and because 'the whole province of music and its relation to number seems to me to represent a *feeling* grasp of the same elements which I shall attempt to formulate consciously' (von Franz 1974, 33). Music, in other words, in the *living* experience of the *unus mundus*. I couldn't agree more.

and pantheism, which both have their roots in the ancient world. Pan is Greek for 'all or every' (with a naughty hint of the hoofed god of Arcadia). *Pantheism* is a belief that God and the universe are identical, implying a denial of the personality and transcendence of God (Sprigge 1997, 191). There is no divide between a creator God and a created world. India has been said to be the native home of pantheism, but C.E. Plumptre, in his *History of Pantheism* (1878) argues that pantheism can be found in the theories of Pythagoras and the Eleatics, Plotinus and the Neoplatonists, John Scotus Erigena (9<sup>th</sup> century) and Giordano Bruno (16<sup>th</sup> century) before it became truly manifest in the works of Baruch Spinoza (17<sup>th</sup> century).<sup>180</sup> It had roots in the Stoics' veneration of nature, and found its fullest expression in the poetry of William Wordsworth (1770-1850) and Walt Whitman (1819-1892) (Levine 1994, 121). The pantheist attitude is generally taken to generate a morally sound ecological ethic, extending ethics beyond the human to non-human and non-living things, which explains the emergence of pantheist ideas with ecological philosophies (Levine 1994, 128/132). When it comes to name the cosmology of the *Timaeus* as pantheism, difficulties arise; apart from the creator-god there are other gods, the universe itself as a soul-body *composite* and the fiery planetary gods (Baltzly 2010, 9). The pantheists Stoics brought the Platonic forms, creator and world soul together in the concept of *pneuma* that interpenetrates everything (Baltzly 2010, 23).

The more philosophical theory of *panpsychism* proclaims 'something mind-like in everything'; it holds that consciousness is a primary quality of the universe (Taylor 2017, 155). There is no established definition of panpsychism.<sup>181</sup> Emma Restall Orr defines panpsychism as 'a monist metaphysical stance, based upon the idea that mind and matter are not distinct and separate substances but an integrated reality, rooted in nature'; panpsychism is 'based upon ubiquitous and integrated mindedness' (Restall Orr 2012, 104-106). It can also be formulated as a metaphysical theory, found in the writings of, for

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<sup>180</sup> Plumptre, Constance E. (1878/1879) *General sketch of the history of pantheism*. London UK: Samuel Deacon and Co.

<sup>181</sup> An excellent discussion of this confused situation can be found in Skrbina 2007, 15-25.



instance, the philosophers Gottfried Wilhelm Leibniz, Alan Whitehead and Charles Hartshorne.<sup>182</sup>

Since the 1960s, nature is back on the agenda of contemporary philosophy. An emerging awareness of global environmental problems gave rise to ecological philosophy and environmental ethics.<sup>183</sup> Taking nature seriously led to new ideas, exemplified by the 'Gaia hypothesis', formulated by James Lovelock, stating that the earth is a self-regulating, complex system that helps to maintain the conditions for life. In the 1990s the biologist Rupert Sheldrake (b. 1942) argued for a 'new animism' which incorporates a strong version of the Gaia hypothesis, writing that 'if Gaia is in some sense animated, then she must have something like a soul' (Skrbina 2007, 200). Philosopher Freya Mathews argues that a holistic or cosmological version of panpsychism functions not merely as a rival theory but as a rival paradigm to materialism (Mathews 2011). In this she is joined by, among others, Rupert Sheldrake and David Skrbina.<sup>184</sup> Mathews has made a passionate appeal to change our attitude to nature from exploitation of dead matter into an erotic encounter with an enchanted world, using poetry and music (Mathews 2003). In her work, the ancient paradox of cosmic music resurfaces as contemporary philosophy of nature, connected to a practice of music.

### *Towards new music*

The classical music of the period after the *Sacre du Printemps* and First World War was marked by the desire of composers for a change, an urge to break free from Romantic aesthetics and to shock the audience out of a dream of fulfilment in the beyond.<sup>185</sup> It led to all sorts of experiments with new compositional techniques, unfamiliar instruments,

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<sup>182</sup> See Skrbina (2005) on Leibniz (95-99), Whitehead (174-177) and Hartshorne (208-217).

<sup>183</sup> In 1967, the ecologist Lynn White blamed Christianity as 'the most anthropocentric religion the world has seen' for encouraging the exploitation of nature (Skrbina 2005, 226).

<sup>184</sup> See Sheldrake 2013; Skrbina writes that 'panpsychism is the superior worldview because it leads to a more integrated, compassionate, and sympathetic cosmos. (...) Panpsychism appears able to provide the foundation for a new worldview in a way that deeply addresses the root issues' (Skrbina 2005, 268-269). Thomas Nagel writes that 'each of our lives is a part of the lengthy process of the universe gradually waking up and becoming aware of itself' (cited in Sheldrake 2013, 215).

<sup>185</sup> I suspect this may be connected to a change in religious attitude, away from traditional myth, in search for a new form of the sacred, of the cosmos as a theophany (see Armstrong 1973).

and unusual settings. The inclusive elements of melody, dance and emotion often vanished in the process.<sup>186</sup> As examples of the search for new music, I would like to present two, very different, composers.

In 1940, the American composer Harry Partch (1901-1974) articulated why he had to break free from Romantic aesthetics:

The great cathedral of modern music, erected in trial and labor and pain through most of the Christian era, is a safe and beautiful sanctuary. Its one sad aspect is that it seems to be finished - there is so little, if anything, that is significant that can be added to it. On the other hand, in the wild, little known country of subtle tones beyond the safe cathedral, the trails are old and dim, they disappear completely, and there are many hazards (Harry Partch *Patterns of Music*; Strunk 1998, 1447).

Partch's 'wild, little known country' was the domain of microtonal scales. He 'became so dissatisfied with the body of knowledge and usages as ordinarily imparted in the teaching of music' that he refused to accept it, and developed a new, yet very old philosophy (Partch 1974, 4).<sup>187</sup> In the 1920s, he abandoned the traditional twelve-tone scale and designed new instruments, tuned according to the natural overtone series, some having as many as 43 tones to the octave. In 1947, he published his ideas in his book *Genesis of a Music*, full of the science of harmonics, stepping beyond the Pythagorean fifth and equal temperament. Partch aspired to the ideal of Greek tragedy and composed vocal and instrumental music in other tunings, for his self-made instruments, insisting that only music seen and heard in performance had 'genuine integrity' ((Burkholder 2014, 944; Gilmore 1998, 4). Unfortunately, his works are not often performed.<sup>188</sup> Partch attached great importance to the 'embodiment' of performing musicians: 'corporeal' music, 'vital to a here and now', as the antithesis of Absolute or Abstract music (Partch 1974, 8; 49-50). He remained outside the musical establishment all his life.

Of a very different character was the German composer Karlheinz Stockhausen (1928-2007), who managed to be one step ahead of everybody. He was the foremost *avant-garde* explorer of new ideas in classical music after the Second World War. He embraced

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<sup>186</sup> On 20<sup>th</sup> century music, see Burkholder (2014) *A History of Western Music*.

<sup>187</sup> Partch wrote: 'Just how old this "new" philosophy actually is has been a continual revelation to me' (Partch 1974, 4).

<sup>188</sup> See the information of the Harry Partch Foundation on <http://www.corporealmeadows.com/>. Accessed 13/04/2017. American Mavericks has a webpage of Harry Partch instruments: [http://musicmavericks.publicradio.org/features/feature\\_partch.html#](http://musicmavericks.publicradio.org/features/feature_partch.html#) Accessed 13/04/2017.

serialism, electronics, spatialisation, improvisation, simplicity, graphics, harmonics, spiritualism, mysticism, astrology, multimedia, in short anything controversial. In 1968 Stockhausen introduced 'Intuitive Music', carrying connotations of authenticity, and lack of artifice. He urged musicians to meditate, to expand consciousness to the level of cosmic consciousness, of which everyday human thinking consciousness is but a pale flickering shadow, seen as an obstacle to Intuitive Music (Bennett Hog in Clarke 2011, 82). In 1971 Stockhausen absorbed the ideas of the Indian sage Sri Aurobindo and composed *Sternklang*, which he called 'sacred music ... for listening in meditation, for the sinking of the individual in the cosmic whole. It is intended as a preparation for beings from the stars and their arrival' (Kurtz 1992, 185). In 1975, he composed *Tierkreis*, twelve melodies on the star sign. Stockhausen wrote: 'The stars are organized in a serial way. Whenever you look at a certain star sign you find a limited number of elements with different intervals. If we more thoroughly studied the distances and proportions of the stars we'd probably find certain relationships of multiples based on some logarithmic scale or whatever the scale may be' (Cott 1973, 101). In spite of his genius, the eclectic Stockhausen remained controversial, I presume because of his self-importance. Jamie James has made an interesting comment on Stockhausen, which expresses the paradox of star music in a brilliant way:

Yet for all his insistence on the Spirit and spirituality, Stockhausen still places his emphasis on the self, and that is what makes him an utterly modern man and alienated from the Pythagorean ideal. For in the great tradition the key is to find one's center outside of one's self, in the whole cosmos, paradoxically to become centreless' (James 1993, 240).

I will return to the question of the inclusion of the cosmos in musical consciousness in the next chapter.

The real change in the music of the twentieth century did not happen in the world of classical music. By far the most important change was the expansion of popular culture.<sup>189</sup> The introduction of the cinema, radio, record player, television, sound amplification, and the general increase in wealth produced a demand for music on a large scale that was inclusive, participatory, and expressing general human desires, including longing for the sacred. In this way, canons of classics developed for popular song, blues,

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<sup>189</sup> See Burkholder (2014, 957 ff.)

jazz, and film music in parallel with classical music (Burkholder 2014, 876). After the Second World War, economic growth turned young people into a target for the marketing industry, resulting in pop music (Burkholder 2014, 909). The most important stylistic difference between twentieth century popular music and classical music was the rhythmic dimension, especially the drums and the bass, moving the audience to dance. Pop music was, like ancient Greek music, build around lyrics, melody, and repetition. Before the advent of rock, little can be found in popular music that related demonstrably to the concept of the world soul, except perhaps for the ideas of jazz saxophonist John Coltrane (1926-1967). In the liner notes of his 1964/1965 album *A Love Supreme*, Coltrane writes that, in 1957, 'I experienced, by the grace of God, a spiritual awakening which was to lead me to a richer, fuller, more productive life. At that time, in gratitude, I humbly asked to be given the means and privilege to make others happy through music'. Coltrane developed a strong interest in Universalism and Eastern religions, and promoted meditation among jazz musicians and audiences.<sup>190</sup> In the footsteps of Coltrane, some jazz musicians developed spiritual leanings, for example Tony Scott, John McLaughlin, and Sun Ra. However, their jazz was 'art music', for the few. By the 1970s, symphonic rock music introduced a sense of the archaic, the sacred, and ancient mysticism to a *large* audience. For instance, Mike Oldfield's 1973 album *Tubular Bells* probably sold more than a dozen million copies worldwide.<sup>191</sup> In the next chapter, I will argue that rock religiosity was strongly influenced by the 1960s trend to use entheogenic drugs like LSD. What Debussy had intended to communicate with the symphony orchestra, was expressed by British rock musicians in their psychedelic 'concept albums': a fulfilment of the longings of the soul in the *material* world.

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<sup>190</sup> On Coltrane, see Hamel (1976, 132); also, the music journalist/astrologer Neil Spencer (2000) *True As The Stars Above. Adventures in Modern Astrology*. London UK: Orion. Coltrane contributed to Miles Davis' 1959 album *Kind of Blue*, which is considered one of the most influential albums in the history of jazz; it introduced *modal* jazz, based on the theory of ancient Greek music.

<sup>191</sup> Other symphonic rock albums that connected implicitly or explicitly to an ancient celebration of creation were, for instance, Pink Floyd *Atom Heart Mother* (1970), *Meddle* (1971); King Crimson *In the Court of the Crimson King* (1969); Yes *Close To The Edge* (1972). Although the genre still exists as 'progressive rock', it has lost the momentum of renewal.

### *A mysterious new universe*

During the twentieth century, the seemingly rational worldview of mechanistic science was replaced by a mind-boggling new scientific concept of the universe. The most important developments in the new physics were Albert Einstein's theories of relativity on the macrocosmic level, quantum theory on the microcosmic level and superstring theory, attempting to bridge the two.<sup>192</sup> These theories completely transformed the worldview initiated by the research of Isaac Newton, who described gravity in 1687 in a mathematical fashion and proved that his law accounted for the elliptical orbits of the planets. In Einstein's general theory of relativity, planets actually follow the straightest path in a 'space-time' that is curved by the presence of the sun (Rees 1999, 31). Most people now know the equation of energy and matter  $E=mc^2$ . The global relevance of nuclear physics was brought home by the use of the first atom bomb in 1945.

Quantum theory showed that, at the subatomic level, particles can behave different when observed. David Fideler stated in 1995 that

over the last century the mechanistic view of the universe has started to completely break down. Because the implications of quantum mechanics, chaos theory, and the realization that we inhabit an evolutionary, self-organizing universe are starting to work themselves out, it is no exaggeration to say that we are truly living in the midst of a new Cosmological Revolution that will ultimately overshadow the Scientific Revolution of the Renaissance (Fideler 1997, 142).

The philosopher Alfred North Whitehead (1861-1947) recognized the radical implications of quantum physics, that there is no such thing as timeless matter; all physical objects are processes that have time within them, everything is vibratory (Sheldrake 2013, 215). The connection between the theories of quantum physics and consciousness found a voice in the physicist David Bohm (1917-1992), a colleague of Albert Einstein. Bohm considered the dualist model of reality outdated by the insights of quantum physics. He concluded that matter is participatory because of the quantum, non-locality nature of atomic particles. The whole of the universe is in some way enfolded in everything and each thing is enfolded in the whole. In an interview in 1982 he said that 'in a way, nature is alive, as Whitehead would say, all the way to the depths. And intelligent. Thus, it is both mental

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<sup>192</sup> Albert Einstein wrote in 1930 that the 'cosmic religious feeling', which knows no dogma and no God conceived in man's image, is to be kept alive by artists and scientists, driven by a deep conviction of the rationality of the universe (Einstein in Fideler 1997, 11-14).

and material, as we are' (Skrbina 2005, 204-205). Fideler writes that 'some physicists have suggested that the entire cosmos is a unified quantum system in which every particle knows what every other particle is doing' (Fideler 2014, 195).

Superstring theory, especially M-theory, tried to bring the four fundamental forces (gravitational, electromagnetic, strong and weak nuclear) together in a synthesis, proposing the existence of a primal unified field in ten dimensions, which differentiated in the so-called first microseconds of the Big Bang.<sup>193</sup> The name derives from the analogy with harmonics from a vibrating string. The 'strings' have scales based on the Planck length.<sup>194</sup> Superstring theory seems to promise a synthesis between Einstein's gravity theories and quantum physics (Rees 1999, 145). Martin Rees remarks about the Big Bang theory that 'we can't identify the origin of the expansion with any particular location in our present universe' (Rees 1999, 67). In other words, it is everywhere and nowhere, a paradox.

The findings of the new physics are only slowly becoming part of a general worldview, which is still rooted in Newtonian physics and Cartesian psychology. They present a universe where the relation between matter and consciousness is a paradox. The reality of the new physics is more mystical than anything the Romantic imagination has ever produced. David Fideler sees contemporary science as supporting the ancient Stoic idea that the universe and matter itself is intelligent and knows how to self-organize, and that our own human intelligence is rooted in the mind of the greater cosmos (Fideler 2014, 205). To Fideler, the main topic throughout is the resacralization of nature (Fideler 2014, 30).<sup>195</sup> Debussy, John Coltrane and Mike Oldfield would probably agree.

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<sup>193</sup> Freya Mathews argues that to speak of 'the first three minutes of creation' is a mistake, a naïve projection of a narrow-minded physicists' view. She asserts that 'there is no more reason to suppose that those early stages lasted for three minutes than that they did so for three billion years, since no measure of time was available. (...) The most we can say is that the universe was around, in a temporally indeterminate way, and then the possibility of a metric temporal order started to emerge' (Mathews 2003, 53).

<sup>194</sup> 'Planck length' is about  $10^{19}$  smaller than a proton (Rees 1999, 141-142).

<sup>195</sup> In 1975, Fritjof Capra said something comparable, but related to Eastern religion, in his pop-science book *The Tao of Physics: An Exploration of the Parallels Between Modern Physics and Eastern Mysticism*. The ecologist Adrian Ivakhiv writes that the success of the book stimulated 'a string of popular authors and intellectuals to draw on the findings of quantum physics, nonlinear thermodynamics, complex and self-organizing system theories, Gaia theory, holographic models of mind, and other twentieth century scientific developments, to articulate a new and 'constructive postmodern' cosmology' (cited in Kemp 2004, 218).

*The soul of the world*

I hope my re-reading of some musical and scientific ideas of the twentieth century have highlighted what I call 'the rediscovery of the world soul'. The development of the theory of the ubiquity of consciousness, and the astonishing discoveries of quantum physics both signify a universe that is alive and sentient. In music, there was a constant desire for change, for the inclusiveness of 'musicking', which was carried everywhere by popular music. Human consciousness was no longer in the brain, a particle could be a wave, time and space were no longer linear, and music was no longer a thing but a process. The underlying theme was, I believe, the slowly evolving awareness of the sacredness of the material world. Plato calls the earth 'first and most venerable of all the gods that are within the heaven' (*Tim.* 40bc). If Pythagoras was listening to a cosmos that is alive and aware, the music he is said to have heard would have the imprint of an absolute and yet natural order. If matter is not dead but alive, and consciousness is not immaterial, then I think this amounts to another paradox, one that crosses the border between contemporary physics and ancient mysticism, and which is well expressed by the idea of cosmic music.

## 9. Pythagoras for the New Age

The wonderful thing about music is that through it one can achieve concentration and meditation independently of thought. In this sense, it bridges the gulf between conscious and unconscious, between form and formlessness. If there is one thing that can be grasped by the understanding and is effective, yet at the same time has no form, that thing is music.

(Hazrat Inayat Khan in Hamel, *Through Music to the Self*; 1976, 215)

In this chapter I argue that in our own time, a new kind of music is arising, music that has the intention to shift consciousness, very much in parallel to developments that have been labelled 'New Age'.<sup>196</sup> By exploring what this 'New Age' means for cosmic music, I signal a definite connection of this new form of music to ancient philosophy. In the introduction, I have argued that, following Gadamer, ancient philosophy is relevant to a practice of music as a *living paradox*, as a shared transcendent meaning of music present in the moment of performance. Is the paradox of 'star music' present in New Age music?

### *The future of the past*

In his book *The Future of the Ancient World*, the contemporary English philosopher Jeremy Naydler says that 'in allowing our gaze to be drawn back to the past, we can equip ourselves all the better to work creatively with what has yet to unfold (Naydler 2009, 184). He argues that the ancient Greeks had 'a type of unitary consciousness', constantly being confronted by 'transpersonal forces', which in the ancient world meant by the gods (Naydler 2009, 189). The beginnings of a transition to a more independent individual consciousness Naydler traces to the primacy of the act of thinking, as became apparent in Aristotelian philosophy (ibid., 197). This led in time to the interiority of the soul-life and the exteriorization of nature, exemplified by Cartesian dualism (ibid., 199). Naydler thinks that today, we have arrived at a drastically narrowed vision of reality, compared with that of the ancients (ibid., 200). He urges a 'restoration to nature of our introjections', a

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<sup>196</sup> See Jeremy Naydler (2009) *The Future of the Ancient World. Essays on the History of Consciousness*; Wouter Hanegraaff (1998) *New Age religion and Western culture*; and Peter Hamel (1978) *Through Music to the Self*.



renewed relationship based on 'a free reflective act' (ibid., 201). This is to be achieved by rediscovery and reunion through contemplative imagination, although the 'scar' of the separation of the self-conscious ego from the sacred will always be with us (ibid., 203).<sup>197</sup> Although I much value contemplative imagination, for me it is limited to the reflecting mind. Arguably, music offers another avenue to healing and reconnection to the sacred, which involves the *whole* human being. For this reason, the Pythagorean music of the spheres is a symbol for healing of the future, as well as in the past.

### *Pythagoras the avatar*

Joscelyn Godwin is well-known for his research on 'speculative music': 'looking at the cosmos musically, and at music cosmically' (Godwin 1982, 373).<sup>198</sup> He has called Pythagoras the 'tutelary genius of Western civilization' and 'the very midwife of our epoch', 'sowing the seeds of a new consciousness' (Godwin in Guthrie 1987, 11).

Our civilization is now, quite unconsciously, more imbued with Pythagorean influences than it has ever been. The evidence is plain to see wherever one looks, in phenomena as various as vegetarianism and the whole-food movement; post-modernist architecture; the synthesis of religions, travellers in search of Oriental wisdom; researches into ancient Egypt and Babylon; the revivals of sacred geometry, arithmology and speculative music; reprints of Pythagorean literature; meditation; music therapy, the speculations of modern physicists; communes and spiritual communities; the widespread belief in reincarnation. Pythagoras is the center towards all these scattered impulses point. If he failed as the avatar of the passing age, perhaps he is coming into his own as a new one dawns (Godwin, in Guthrie 1987, 13-14).

In this highly provocative statement, Godwin refers to the beginning of the astrological Age of Aquarius, which has generally become known as the *New Age*. There is no consensus when exactly in time this moment lies, in the past or in the future, nor what

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<sup>197</sup> Nicholas Campion argues that, 'while much modern psychology has become almost entirely dissociated from *psyche* in its original sense, the reaction to such ideas began with Jung in the 1910s and has found a home in the various schools of post-Jungian and transpersonal psychology. Plato's idea of the rational mind, that part of the psyche which was in contact with the divine, survives in various forms' (Campion 2006, 10). James Hillman advocates breaking down our present sustaining paradigm, 'allowing to emerge a renaissance of soul in the midst of the world' (Hillman 1992, 130). He writes that modern psychotherapy disguises the redemption of the soul as 'raising consciousness' (Hillman 1992, 118).

<sup>198</sup> See Appendix 1.

New Age exactly is.<sup>199</sup> The contemporary scholar of esotericism Wouter Hanegraaff has tried to map the phenomenon of New Age by analysing the religious component in New Age thought (Hanegraaff 1998).<sup>200</sup> Below I will compare Hanegraaff's analysis with Godwin's expectations.<sup>201</sup>

### *Nothing new*

According to Hanegraaff, New Age emerged in a strict sense as counterculture in the 1960s and became general in the 1980s. He describes New Age religiosity as having the following main components:

1. this-worldliness, sometimes connected to the neo-pagan Goddess movement,
2. holism, the interrelatedness of all things, considered a new scientific paradigm,
3. evolutionism, a teleological view of the history of consciousness,
4. psycho-religion or healing and spiritual growth, connected to transpersonal psychology,
5. expectations of a coming New Age (Hanegraaff 1998, 365-366, 514).

What keeps New Age together, according to Hanegraaff, is the rejection of dualism and reductionism, the dominant tendencies which characterised the 'Piscean Age', the astrological period before New Age. Hanegraaff is sceptical about New Age: he thinks it has the characteristics of a 'spiritual supermarket' and questions if there is anything new

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<sup>199</sup> Hanegraaff: 'My research suggests strongly that, in spite of the term, astrology plays only a minor part in New Age expectations' (Hanegraaff 1998, 356 n124). Astrologers differ in their interpretation of the start of the Age of Aquarius between the 15<sup>th</sup> and the 36<sup>th</sup> century. Richard Tarnas, who argues that the history of mankind is ruled by the position of the planets, locates the dawn of a new universe in the Renaissance and doesn't even mention the Aquarian New Age. See Tarnas, R. (2006) *Cosmos and Psyche: Intimations of a New World View*. New York NY: Viking. A thorough investigation would be needed to answer questions on the relation of New Age to astrology, which is beyond this research.

<sup>200</sup> Hanegraaff has not a single sentence on music in his book *New Age Religion and Western Culture*.

<sup>201</sup> Godwin is not the only thinker who signals a rebirth of ancient ideas in present times. April DeConinck has recently argued in her provocative book *The Gnostic New Age* that we are witnessing a countercultural rebellion of popular culture against the intellectuality of established religion, inspired by and connected to the ancient Gnostic movement of the first centuries CE (DeConinck 2016, 343). At the heart of this 'Gnostic New Age', according to DeConinck, is rapture: a spontaneous, overwhelming mystical experience (DeConinck 2016, 350).

in New Age at all (Hanegraaff in Kemp 2007, 25-49).<sup>202</sup> Although I value his analysis, I do not agree with Hanegraaff's dismissal of New Age. Because New Age is not an ideology nor a movement, but the popular expression of what Naydler has called the 'restoration to nature of our introjections', its manifestations are necessarily dreamy, undifferentiated, or paradoxical. What sceptics like Hanegraaff dismiss in New Age as a 'pick and mix spirituality' can be seen as the result of a reflexive re-reading of ancient beliefs by New Age thinkers. Beyond faith and reason, they seek to extract meaning to position their spiritual experiences in a new view of the world, recycling some old ideas.<sup>203</sup>

### *Old is new*

I will now connect Hanegraaff's New Age characteristics with music. The first characteristic, 'this-worldliness', is a rather vague indication of an attitude, that may be related to immanence, theophany and embodiment.<sup>204</sup> In terms of music, it implies a paradoxical presence of the sacred in the moment of a musical performance; yet where it differs from Romantic absolute music is the connection with 'holism, the interrelatedness of all things'. The sacred then pertains not just to the soul, as with the Romantics, but to the whole of creation, including the human body, that is sacred music for body *and* soul. The inclusion of bodily sensations in twentieth-century music can be seen at work in the slow change in sound (beat, bass, drums) and setting (visuals, dance, sex-appeal). Healing music is therapeutic music, and that is the cornerstone of both Pythagorean and New Age music science. New Age expects to witness a new form of global consciousness, imbued with meaningfulness of a sacred order, as in Plato's teleological creation myth of the *Timaeus*. The most influential writer of New Age is Eckhart Tolle, who had a spontaneous religious experience at the age of 29 and became a very successful spiritual teacher, selling over ten million books worldwide (Tolle 1997). Tolle sees evolution in terms of the 'filter theory' of consciousness when he writes that

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<sup>202</sup> Hanegraaff: 'Most of the beliefs which characterise the New Age were already present by the end of the 19th century, even to such an extent that one may legitimately wonder whether the New Age brings anything new at all' (Hanegraaff 1998, 482-483).

<sup>203</sup> See Jeffrey Kripal (2014) *Comparing Religions: Coming to Terms*.

<sup>204</sup> On 'this-worldliness', see chapter 1. Introduction.

‘the brain does not create consciousness, but consciousness created the brain’ (Tolle 2005, 293). Tolle says we are witnessing the dawn of a New Age of global, non-ego based consciousness, a consciousness that has become conscious of itself (Tolle 2005, 93, 182).<sup>205</sup> The avenue to this new consciousness is to step beyond the identification with the ego-centred language-based mind (Tolle 2005, 251).<sup>206</sup> Joscelyn Godwin describes the highest level of listening to music as a merging and identifying with the music itself, leaving behind the ego, a total self-absorption in sound, attested by ‘mystics, poets, and even ordinary people’, ‘sought by lovers of nature and of art alike’ (Godwin 1987, 84-85). In that way, New Age music could generate a transformative shift of consciousness, which is at once a return to the ancient understanding of the cosmos; new and old in one. Are Tolle and Godwin referring to the same experience? I will come back to this question, but first I will examine the history of New Age music to see whether any of these constructs are apparent.

### *Pop star music*

Since the mid-nineteenth century, new popular traditions emerged in music, especially after the Second World War (Burkholder 2014, 903). In the 1950s a new style that blended black and white traditions of popular music, *rock and roll*, caught the attention of teenagers in the United States, and was outselling every other kind of music by 1960 all over the world as *rock* (Burkholder 2014, 915). As the fans stayed with rock music, the audience gradually expanded to all ages, becoming a global popular culture (Burkholder 2014, 917). Unlike American Songbook repertoire, rock music was created by the performers themselves. The basic message of rock and roll was erotic desire, but as rock developed it covered other topics as well, including the spiritual. In 1988, the journalist Steve Turner published *Hungry for Heaven*, a study of the search for redemption by rock stars, many of whom he had interviewed personally (Turner 1988). In short, his analysis

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<sup>205</sup> An academic approach to New Age as a stage in the evolution of consciousness is attempted by Steve Taylor in *The Leap. The Psychology of Spiritual Awakening* (Taylor 2017). However, Taylor does not mention music as a factor in awakening.

<sup>206</sup> Tolle: ‘When I no longer confuse who I am with a temporary form of “me”, then the dimension of the limitless and the eternal – God – can express itself through “me” and guide “me” (Tolle 2005, 251).

attributes the wave of creativity and experimentation in the sixties and seventies in rock music to the widespread use of LSD by musicians: The Beatles, Who, Doors, Jefferson Airplane, Grateful Dead, to name a few. It was immediately followed by an interest in Eastern spiritual practices (Transcendental Meditation, Hare Krishna, Zen Buddhism) as a clean alternative to the use of drugs, and that lead eventually to the genre of New Age music.<sup>207</sup> Turner describes the enormous impact of the religious experience induced by LSD when the drug became readily available, as a short-lived religion. ‘What rock ‘n roll did was to broadcast the hip secret. (...) By 1971 it was reckoned that five million Americans had tasted of the forbidden fruit’ (Turner 1988, 69). Rock musicians high on LSD abandoned old rules of song-writing, like the three-minute barrier, and experimented with esoteric poetry, sampled sounds, new rhythms, scales, forms, and exotic instruments.

### *One flash of light, but no smoking pistol* <sup>208</sup>

From the end of the 1960s, I have personally witnessed the liberation of popular music from the restrictions of tradition and commerce. I pondered the arcane messages of rock lyrics and perceived a new world in the making, on the other side of the generation gap. I remember the impact of the strange, ‘oriental’ song *Tomorrow Never Knows* by The Beatles, starting with the line ‘Turn off your mind, relax and float downstream’. The 1967 Beatle album *Sgt. Pepper's Lonely Hearts Club Band* I clearly recognized as a monument of a New Age. It featured hallucinatory lyrics (*Lucy in the Sky with Diamonds*), new instruments (synthesizer, sitar), traditional instruments in new ways (orchestral climax in *A Day In The Life*, inspired by Cage and Stockhausen), multi-layered sound spaces and sampling (*Being for the Benefit of Mr. Kite!*) (see Jörg Fachner in Clarke 2011, 268). The connection between rock music and the ancient culture I learned at school, I intuited from the lyrics of British symphonic rock bands like King Crimson and Genesis, whose members were well-educated. The Beatles were self-taught, creative, non-conformist

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<sup>207</sup> Those who were not charmed by Eastern ideas turned to punk (Sex Pistols), magic (Rolling Stones), or to religious traditions like Rastafari (Bob Marley), Islam (Cat Stevens), or Christianity (Bob Dylan, U2).

<sup>208</sup> From the lyrics of David Bowie *Ashes to Ashes* (1980), looking back on his drug abuse of the 1960s.

musicians. Their success suggested that *anybody* with a guitar could become a popstar.<sup>209</sup> To the surprise of many fans, between 1964 and 1967 the Beatles transformed from “scream-age” to New Age, from rock ‘n roll to the sitar music of Ravi Shankar (Turner 1988, 64-65). Turner sees New Age music as ‘the maturing of the hippie movement of the sixties’ (Turner 1988, 125). New Age, he writes, saw sound as containing healing qualities and New Age music as bringing about states of altered consciousness (Turner 1988, 118). Writing in 1988, Turner signalled a profound long-term effect of the New Age music (Turner 1988, 125). To Joscelyn Godwin ‘rock and roll was the single most important innovation of the post-war period. (...) It was jazz that first revived the Dionysian impulse in the West. (...) With rock and roll, Dionysius came back with a vengeance, complete with his pharmacopeia’ (Godwin 1987, 102).<sup>210</sup> In the wake of the success of rock, a global, new music industry sprang up around LP/CD sales, pop concerts, festivals, discotheques and house/trance/dance parties. At first sight, it seems no music could be further away from the eternal silence of the stars than loud electronic beats.

### *Sweet surrender*

The ethnomusicologist Gilbert Rouget has argued in 1985 that trance induced by music is a universal phenomenon and consists of two components, reflecting the cultural and the natural sides of humanity (Rouget 1985, 3). He distinguished between ‘ecstasy’ as an altered state of consciousness associated with silence, immobility, solitude, deprivation, and visions; and ‘trance’, associated with movement, noise, agitation, company, overstimulation, and *amnesia* (Rouget 1985, 11). In terms of ancient Greek music, this may be compared to the differentiation between Apollonian and Dionysian music, made by Friedrich Nietzsche (Rouget 1985, 93). Rouget thinks that Plato’s ‘telestic *mania*’ (Plato *Phaedrus* 265a-b) comprises possession, trance, ritual madness, sacrifices, dances, and

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<sup>209</sup> René Descartes (1596–1650) believed that the music of the ancients ‘had something more powerful than ours not because it was more learned, but because it was less, from which it comes about that those who have a great natural talent for music, not being subject to the rules of diatonic music, do more by the sole force of imagination, which those cannot do who have corrupted that force by knowledge of theory’ (Descartes quoted in Pesic 2014, 96).

<sup>210</sup> In his latest publication, *The Golden Thread* (2007), Godwin no longer mentions Pythagoras when discussing the esotericism of New Age.

music, invoking the healing presence of a deity (Rouget 1985, 189; 196). Rouget argues that 'telestic *mania*' can restore the individual's equilibrium, when an external movement (dance and music) overpowers an aberrant internal movement, due to affinity of the *mania* with the harmonies and revolutions of the heavens (Rouget 1985, 204).<sup>211</sup> He summarizes Plato's theory of the relations between trance and music as follows:

People who are psychologically somewhat fragile, and who as the result of god's anger suffer from divine madness, cure themselves by practising ritual trance, which is triggered by a musical motto and takes the form of a dance; music and dance, by the effect of their movement, reintegrate the sick person into the general movement of the cosmos, and this healing is brought about thanks to the benevolence of gods who have been rendered propitious by sacrifices (Rouget 1985, 205).

Plato, according to Rouget, posits possession as a process through which the individual is reinserted into the whole, both as cosmos and society, and reconciles the person with himself (Rouget 1985, 212).<sup>212</sup> Judith Becker, in response to Rouget, has argued that there is no causal or deterministic relationship between certain types of music and certain kinds of trance; 'one can go into trance without music; one can listen to music and not go into trance' (Becker 1994, 41). She describes the trance as a state of mind with a focus, an intensity, and a noetic quality, which makes normal reality recede and an altered state of consciousness or 'another world' take over (Becker 1994, 47). Scientific research has shown that rhythmic entrainment of the alpha rhythm of the brain by music may induce (but does not necessarily cause) trance (Becker 1994, 48-49). More recently Kathryn A. Becker-Blease, in response to Rouget, has argued that in the past few decades New Age/ambient/trance music has been explicitly developed to produce non-pathological dissociative states (Becker-Blease 2004, 92). In particular, the genre of slow 'space music', leading to 'the experience of flying, floating, cruising, gliding, or hovering within the auditory space', takes the listener out of their body or normal sound

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<sup>211</sup> Recently Gary Tomlinson has argued that entrainment in general encompasses much more than beat induction, including the linked synchrony of tides and the revolutions of the moon (Tomlinson 2015, 77).

<sup>212</sup> For Plato, the principal means to effect entrainment was the tune played by the *aulos*, the shrill instrument of the Bacchantes, the lower classes and slaves. For Aristotle, it was the Phrygian mode, 'pathetic', 'orgiastic' and 'enthusiastic' (Rouget 1985, 223). Rouget comments: 'both philosophers wisely refrained from saying that all Phrygian melodies induce trance; this exaggeration was left to the Renaissance' (Rouget 1985, 226).

environment. She interprets this as ‘depersonalization’, related to altered states of consciousness or Rouget’s concept of ecstasy (Becker-Blease 2004, 93).

I witnessed the birth of space music in the 1970s, the sleepy electronic music of *Tangerine Dream* stands out for me. The term ‘ambient’ is generally associated with the music of Brian Eno (Boyce-Tillman 2016, 247). Eno called the genre ‘intended to induce calm and a space to think’ on the sleeve notes to his album *Ambient 1: Music for Airports* (1978).<sup>213</sup> In a recent interview Eno has reflected that music, as well as visual arts, religion, sex and drugs, is about surrender:

This idea of surrender has become more and more what I’ve been thinking about for the last few years, and I’ve been wanting to make both visual art, which I do a lot of, and music, which says to an audience, ‘This is where you can surrender!’ I consider surrender an active verb, in the sense that you have this spectrum ranging from control to surrender, and the model of post-enlightenment man is that we’ve become better and better at control. If you think of our distant genetic past, most of our time was spent around the surrender end of the spectrum because there wasn’t much we could control. We were at the mercy of weather, creatures, geology, geography and everything else. We had to learn to surrender in a situation because when you are powerless, your option is to go with the flow and learn how to navigate it. That’s what I call active surrender.  
(Eno 2009)

I think Brian Eno has given us a key concept by which to understand the nature of what is generally understood as New Age music: *active surrender*. It is in line with the ideas of Jeremy Nadler and many others. The question is, surrender to *what*? First of all, it means surrender to movement, to entraining rhythm, for relaxation: ‘turn off your mind, relax and float downstream’. From the perspective of ancient philosophy, surrender would be to the sacred. What that means for the creation of New Age music can be inferred from Eckhart Tolle, when he writes that through ‘awakened action’ consciousness flows through the individual into this world (Tolle 2005, 294). It comes with acceptance, enjoyment and enthusiasm:

At the height of creative activity fuelled by enthusiasm, there will be enormous intensity and energy behind what you do. (...) The word enthusiasm comes from ancient Greek –*en* and *theos*, meaning God. And the related word *enthousiazein* means “to be possessed by a god.” With enthusiasm you will find that you don’t

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<sup>213</sup> Perhaps Eric Satie was the first to conceive ‘ambient’ with his *musique d’ameublement* (furniture music, 1917), which however acquired little attention until picked up by John Cage, and was not published until the 1970s. See Stephen Whittington (1993) *Serious Immobilities: On the Centenary of Erik Satie’s Vexations*. Source: [www.academia.edu/171971/](http://www.academia.edu/171971/). Accessed 26/01/2017. Satie, by the way, was a member of the French Rosicrucian Order (Boyce-Tillman 2000, 115).



have to do it all by yourself. In fact, there is nothing of significance that you *can* do by yourself. Sustained enthusiasm brings into existence a wave of creative energy, and all you have to do then is “ride the wave” (Tolle 2005, 301-303).

This is perfectly in line with Ficino’s astral music, Iamblichus’ theurgic ritual and Platonic frenzy. Is sacred creativity, ‘going with the flow’, the essence of New Age music? I will first complete the examination of Hanegraaff’s New Age characteristics and consider the elements he thinks New Age typically rejects: the dualism and reductionism of the ‘Piscean Age’.<sup>214</sup>

### *Holism: all and everything*

In the context of New Age, reductionism means reducing the spiritual to a quality of something material. For instance, the idea that consciousness is in the brain, and depends on it. Rejecting reductionism is embracing holism, which means that a system can only be understood as a whole. The ancient concept of cosmic music sees the inclusion of the whole of creation within a musical world soul, and the ancients perceived the human soul as being immersed in that music. In contemporary terms, this is the starting point for a holistic approach to music therapy, affecting body *and* soul.

After the Second World War, music therapy acquired academic status in the West, but was restricted to a behaviourist approach (Crowe 2004, 10-11).<sup>215</sup> Holistic music therapy arose in 1970s, together with New Age music (McClellan 1991, 119). The measurable effect of specific tones and (ultra)sonic frequencies on the body received most attention, while no verifiable system for healing of the soul was developed (McClellan 1991, 186).<sup>216</sup> However, Randall McClellan has argued that in holistic music therapy ‘our spirit is free to follow the tones into that universe whose harmonious movements we can now recognize

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<sup>214</sup> ‘Piscean Age’ is used here to denote the period before New Age.

<sup>215</sup> The authority on music therapy Barbara Crowe, although critical of an exclusive empirical approach, remains firmly based in reductionism: it all starts in the brain. Oddly, ‘soulmaking’ is defined as a way to psychological health, based on the ideas of James Hillman (Crowe 2004, 341).

<sup>216</sup> From a reductionist standpoint, this can all be explained by referring to brainwaves. The frequency of the brainwave has been proven to be related to the mode of consciousness, usually designated delta (0-4Hz), theta (4-8Hz), alpha (8-13Hz), and beta (13-30Hz); some writers go up to 150Hz, associated with ecstatic and out-of-body experiences (Crowe 2004, 309-310).

as identical to those within' (McClellan 19991, 221). This points to the harmonious movements of planets and music of the *Timaeus* (*Tim.* 47c).

From a holistic point of view, the French music therapist Fabien Maman has developed a method to create one's personal 'cosmic chord', on the basis of the natal horoscope. Maman's *The Musique of the Sky* (2015) is probably the closest contemporary form one can find of Pythagorean music therapy.<sup>217</sup> Maman was a successful jazz musician until he gave up his career in the 1980s to investigate the effect of sound on human cells, shown through Kirlian photography. He expressed his personal insights in a grand scheme combining music therapy, acupuncture, colour therapy, Thai Chi, cosmology, and astrology, integrated in the curriculum of his 'Tama-Do Academy' ('way of the soul'), which trains music therapists to practise acupuncture with tuning forks, and more. Maman claims to have personally heard the music of the stars in the Sahara as a 'sort of silence, vibrating gently but with intensity (...) like a "star-wind" spraying out overtones around the whole zodiac' (Maman 2015, 9). At first, Maman was unable to express this experience in words or music. Through Japanese mantra singing he found the way to an inner hearing of the music of the spheres, described as 'several flutes on my left, and a choir of women's voices on my right. Their voices were extremely high, with amazing harmony and achingly beautiful' (Maman 2015, 10).<sup>218</sup> The German writer Hans Cousto also had a living experience of cosmic harmony; he related his experience to Kepler's ideas and proposed an esoteric system of therapeutical frequencies (*Die Kosmische Oktave*, 1984). With regard to the mysteries of the harmonic series, the American music therapist Jonathan Goldman has successfully developed a practice of overtone singing (*Healing Sounds: The Power of Harmonics*, 1992). June Boyce-Tillman writes about Goldman that he 'roots his work in ancient mystery traditions referring to the Egyptian god Thoth and the Alexandrian philosophy associated with the name of Hermes Trismegistus and by traditions from Egypt, Rome, Greece, Tibet and India' (Boyce-Tillman 2000, 157).

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<sup>217</sup> Composer Kay Gardner (1990) has written something of a manual for composing therapeutic music; she reports on her self-developed practice and reflects on ancient sources. An interesting web article by Wicca John Opsopaus (2004) using Pythagorean theory seems to indicate he does not actually practise music therapy.

<sup>218</sup> I participated in a workshop by Maman in London in 2016 and found the musical dimension of his method sophisticated and very much in tune with Pythagorean philosophy.

The essential characteristic of these forms of New Age holistic music therapy is their aim of bringing about an experience of wholeness through music. In the words of Jeremy Naydler, this is a unitary consciousness, intermingling with the sacred (Naydler 2009). This contemporary practice of music therapy attests to the relevance of ancient philosophy. In terms of New Age thinking, rejection of reductionism asks for what Naydler has called a 'restoration to nature of our introjections', a re-enchantment of the material world with the sacred, in a pantheist or panpsychist way. How the inner world of the psyche and the outer world of matter are connected is a mystery that science has not solved. Holism tries to move forward *and* reconnect with the past. I propose to interpret holism in New Age music as a reconnection between inner and outer musical movement on all levels of existence. It thus comprises individual healing through sound and the experience of all creation as a harmonious movement. In Pythagorean terms, that encompasses the whole range of Boethius' *musica instrumentalis*, *musica humana* and *musica mundane*, including the human body.<sup>219</sup>

### Non-dualism

Rejection of the dualism of the 'Piscean Age', the split of body and spirit or other kinds of divide, can take two forms: monism and non-dualism.<sup>220</sup> Monism raises one principle to the position of the source of all others, non-dualism is the negation of opposites. Monism is a dominant strand in Western thought, from monotheism to Bernardo Kastrup's monistic idealism or materialism. Whenever somebody has named the supreme principle, somebody else has contested it. New Age thought rejects dualism and concise monism, but it does flirt with mystical non-dualism. One of the latest in New Age trends, non-dualism focusses on the dissolution of the separation between knower and known, between subject and object.<sup>221</sup> The central core of non-dualism can never be expressed

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<sup>219</sup> See Boethius *De institutione musica* I.2; 1989, 9-10.

<sup>220</sup> On monism and non-dualism, see for instance Kastrup, Bernardo (2015) *Brief Peaks Beyond: Critical essays on metaphysics, neuroscience, free will, skepticism and culture*; Schaffer, Jonathan (2010) 'Monism: The Priority of the Whole'; David Loy (1988) *Nonduality. A Study in Comparative Philosophy*. 'Piscean Age' is used here to denote the period before New Age.

<sup>221</sup> In a 2016 blog, sound healer Emily Wilkins writes: 'Non-duality is big business right now. It seems to be the spiritual doodah du jour. Talks, seminars, courses, all focused on trying to get you to see that you don't

in words, but it may be hinted at by a paradox. The New Age form of non-dualism pretends to offer - so to speak - a Western intellectual shortcut to what the Buddhists call *Nirvana* and the Hindus *Advaita*.<sup>222</sup>

In terms of New Age music, non-dualism is a promising topic as it touches on the participatory nature of the musical experience. Science has no integral explanation for the experience of music. Once it moves beyond the physical facts, it finds itself confronted by the so-called 'hard problem of consciousness'.<sup>223</sup> How come I can be moved by a sound outside my body to the point of vividly remembering another time, another self? The Sufi master Hazrat Inayat Khan has argued that the wonderful thing about music is that it bridges the gulf between conscious and unconscious, between form and formlessness (Hamel 1976, 215). This has been taken up by Abraham Sussman (Sufi and musician) and Mitchell Kossak (therapist, counsellor and musician) in their article *The Wisdom of the Inner Life: Meeting Oneself Through Meditation and Music*, which discusses 'the psychology of the inner life and how music as meditation can tap into unitive states of being that lead to inner wisdom' (Sussman 2011, 55).<sup>224</sup> They present meditation and music as pathways to intrapersonal wisdom: 'how a person experiences the workings of one's own mind and emotions, and how one gains insight into the very nature of thinking and feeling' (Sussman 2011, 56). Building on their own professional engagement in 'improvisational music with the specific focus of quieting the mind and generating a sense of inner calm', they note that 'silence is an important key to the opening of the inner life' and may lead to 'a realization, which many cultural traditions consider an opening to the sacred' (Sussman 2011, 59). By alternating meditation and musical improvisation in the practice of *Sufi Sesshin* the authors claim to have found a path to inner wisdom (Sussman 2011, 61). This is based on the effects of entrainment, the synchronization of the organism to an external rhythm. Throughout the article, the

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really exist. Neither does the person giving the talk, nor the room everyone's in, nor anything at all. It's all an illusion, from which you can awaken to the truth, that there is no self, no other, no nothing'. Source: <https://puretonesoundtherapy.com/category/all-articles/page/4/> Accessed 04/03/2017. Steve Taylor has convincingly argued that the connection between non-dualism and the world or the self as an illusion is a misunderstanding (Taylor 2017, 242-246).

<sup>222</sup> A few, isolated non-dualist ideas can be found in Western thought; the best example to my knowledge is the anonymous *The Cloud of Unknowing*, from fourteenth century England.

<sup>223</sup> See Josh Weisberg, 'The Hard Problem of Consciousness', *The Internet Encyclopedia of Philosophy*, ISSN 2161-0002, <http://www.iep.utm.edu/>. Accessed 13/03/2017.

<sup>224</sup> I avoid the expression 'music as meditation', because in my experience they are different categories that should not be equated, and for some people they are even incompatible.

authors stress the importance of inner silence, 'setting aside the mental focus on language and ideas' (Sussman 2011, 59). The authors state that in the West the exploration of meditation and contemplation is a relatively new development, starting with the introduction of Zen Buddhism in the twentieth century (Sussman 2011, 56-57). Today, 'mindfulness' is the Western variant of meditation-in-action. It could be argued that music can be a form of practising mindfulness.

### *The mother of sound*

Japanese Zen Buddhism has a tradition of art as practice to attain a state of non-dual awareness, for example archery, painting or musicking.<sup>225</sup> The American composer John Cage (1912-1992) explored Zen Buddhism by making music as a spiritual discipline. Around 1951 he paid a visit to the sound-proof chamber of Harvard University. Instead of encountering silence, he heard a dull roar and a high whine, which turned out to be his own blood circulation and his nervous system in operation. As Kay Larson explains in her study of John Cage and Zen Buddhism, *Where The Heart Beats*, it was a turning point in his life (Larson 2012). He realized there was no such thing as silence, no split between spirit and matter; silence is a change of mind, a turning around (Larson 2012, 270-271). He composed an iconoclastic piece of 'silent music', titled *4'33"*, presenting 4 minutes and 33 seconds of silence, exposing ambient noise. Obviously, Cage was trying to get to the core of the paradox of silence and express it with the 'music of no music', forcing the

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<sup>225</sup> The contemporary philosopher and Zen teacher David Loy has given a concise description of non-dual awareness of music: 'One literally becomes "absorbed" into the music; the sense of a self that is doing the hearing fades, and at the same time the music ceases to be something "out there". Especially if the musical work is a familiar one, we normally (and dualistically) hear each note or chord in the context of the whole phrase, by remembering the previous notes and anticipating the ones to come, as if the whole phrase were simultaneously present before us and we "read" it from beginning to end. (...) This changes in the nondual hearing: No matter how well I may know the work, I cease to anticipate what is coming and become that single note or chord which seems to dance "up and down" (Loy 1988, 71). Loy also confirms that non-dual hearing contains the aspect of an awareness of silence as that which is beyond sound. He writes that, just as non-dual action is 'the action of nonaction' (Chinese *wei-wu-wei*), and non-dual thinking has been called 'the thought of no thought', so non-dual hearing is the awareness of silence, not as the absence of sound but of underlying sound (Loy 1988, 72-73). See also Eugen Herrigel, *Zen in the Art of Archery. Training the Mind and Body to Become One*. London UK: Penguin Books, 2004. Original 1953.

audience to be in the here-and-now.<sup>226</sup> In Zen Buddhism however, there is a whole tradition of art as the practice of meditation-in-action, for example by playing the traditional *Honkyoku* pieces on the *shakuhachi* flute (Brooks 2011). Because of the disastrous outcome of the war, this traditional music had lost its status in post-war Japan. Cage's music caused Japanese composers to reconsider Zen Buddhism, and the young Japanese composer Toru Takemitsu (1930-1996) regained his cultural roots in this way (Sakamoto 2010, 21). 'I wish to search out that single sound which is in itself so strong that it can confront silence. It is then that my own personal insignificance will cease to trouble me' he wrote (Takemitsu 1995, 52). In Japanese philosophy, *Ichion Jobutsu* means that the universe is explored in a single sound, as a way to attain Buddhahood, not as aesthetic pleasure but by stepping beyond the conceptual (Takemitsu 1995, 65). Takemitsu thought that 'the Japanese found more meaning in listening to the innate quality of sound than in using sound as a means of expression. To them natural sound or noise was not a resource for personal expression but a reflection of the world' (Takemitsu 1995, 56-57). When Cage died in 1992, Takemitsu wrote that 'John Cage shook the foundations of Western music and, with almost naïve clarity, he evoked silence as the mother of sound' (Takemitsu 1995, 137).<sup>227</sup> The introvert music that Zen Buddhism employs to generate this experience is usually built on a single sound, or a single pentatonic scale, repetitive phrases, absence of clear rhythm and no sense of thematic development.<sup>228</sup> Koji Matsunobu has explained how this Japanese way of making music can produce 'a state of total mind-body awareness' through *ki* (気), the life force,

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<sup>226</sup> Steve Taylor argues that 'ultimately, the past and the future are concepts created by the human mind. We never actually experience either because our minds and bodies are always in the present. ... In addition, ..., our normal linear perception of time is a mental construct generated by our strong sense of ego. The weaker our sense of ego becomes, the more linear time seems to fade away. Our perception of time slows and expands – and eventually disappears into now-ness' (Taylor 2017, 186-187). Perhaps music can be seen as an exercise in shifting from mental-based to now-ness, brought about by a musical time-perception.

<sup>227</sup> The English composer John Tavener (1944-2013) has said more or less the same: 'even when music is sounding there is, or there should be, an implicit silence – certainly in my music' (Tavener 1999, 157).

<sup>228</sup> The English performer on the Japanese *shakuhachi* flute Ray Brooks relates in his autobiography *Blowing Zen* how learning to play the *Honkyoku*, the repertoire of the mendicant Japanese Zen monks, brought him to Zen Buddhism and non-dualism, which he explains in these words: 'who I am cannot be known in any subjective or objective sense. I am that which illuminates knower, known and means of knowing' (Brooks 2011, 276).

connecting the practitioner to ‘all living creatures, including trees, insects, animals’ (Matsunobu 2013, 67). The parallels with the Platonic *anima mundi* are obvious; just as the soul of the world in the *Timaeus* moves the universe and all life, so does *ki* flow through all sentient beings in Oriental philosophy, and both traditions accord this life force a musical dimension.<sup>229</sup>

The connection between music and meditation gained substantial attention from Western musicians from the 1960s, as documented by Peter Hamel in his book *Through Music to the Self* (Hamel 1976). Hamel says that an important breakthrough in the meeting of Eastern and Western music came when jazz clarinettist Tony Scott produced *Music for Zen Meditation* in 1964. The album is often considered to be the first new-age or world music record. Scott improvised on Japanese modes, together with two classical Japanese musicians on *koto* and *shakuhachi* (Hamel 1976, 133). That music as a spiritual practice is not a specifically Japanese experience is shown by the American saxophonist Randall Hall, who, after an hour of Feldenkrais exercises started to play

the best note I had ever played in my life. (...) I never played a second note because I was drawn into this initial note. (...) As this realization came into focus I thought of *Tre pezzi* [by Giacinto Scelsi], and, with the same focus on breath and sound, I played through the piece. This reading still stands out as one of the most profound musical experiences of my life. Suddenly I had a flash of insight into Scelsi’s music: he had composed a piece that facilitated this meditative connection between sound and breath, and that allowed one to experience the immensity and variety of material contained in a single sound if we can listen past the surface of the sound (Hall 2017).

In retrospect, Hall traced the concept of sound as a manifestation of the sacred energies of the cosmos in the West back to Pythagoras and even beyond, to dawn of human consciousness. He realised that ‘spiritual experience is the foundation of both mysticism and art, the only difference is that the artist has a means by which to preserve and communicate that experience in material form, to make the transcendent tangible’.<sup>230</sup>

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<sup>229</sup> Perhaps the ‘sound that has been with you since you were born’ is related to the ‘original face’ of Zen Buddhism. The Zen *kōan*: ‘what did your face look like before your parents were born?’ is supposed to point to the nonduality of subject and object. See Paul Reps (ed) (1957) *Zen Flesh, Zen Bones. A Collection of Zen & Pre-Zen Writings*. Rutland VM: Charles E. Tuttle Co. *The Gateless Gate* 23, 137.

<sup>230</sup> Hall: *Not in Music, But in Sound: An Encounter with Giacinto Scelsi*. unpublished article; see Hall 2017). Currently Hall is engaged in a project titled *Of Earth and Starry Sky*, ‘based on the ‘Orphic Gold Tablets’, small pieces of gold foil inscribed with Greek texts found in ancient graves, mostly in southern Italy’ (Hall 2017). For a recent survey, see Edmonds, R. G. (ed) (2011) *The “Orphic” gold tablets and Greek religion. Further along the path*. Cambridge UK: Cambridge University Press.

All these excursions into an unusual, esoteric experience of music, and an identification with sound beyond a limited personal self, connect well with the aim of being completely in the moment and with the New Age expectancy of awakening from language-based thought. From Hazrat Inayat Khan's argument that music bridges the gulf between form and formlessness, one can proceed to music as bridging subject and object, and the possibility of musical consciousness as the shared, holistic experience that Jeremy Naydler has attributed to the ancient Greeks (Naydler 2009, 189).

### *New Age Star Music*

There appears to be enough evidence to establish a connection between Pythagorean philosophy and New Age music. However, as I have argued in previous chapters, it seems every past age has had its own form of cosmic music, in theory or in practice. New Age cosmic music differs from the previous forms of cosmic music because of the New Age expectation of a shift in consciousness, an element that could lift the paradox of star music to the level of an agent of transformation, somewhat analogous to the Zen *kōan*, a paradoxical statement for provoking enlightenment. Coming back to the question I posed at the very beginning of my journey through the history of ideas, what exactly Pythagoras heard and what he was indicating with his idea of the planetary scale, we will never know for certain. I would like to think that he had an experience of what Steve Taylor has called 'awakening', and was expressing that as a paradox of the unity of silence and sound, of the eternal and the temporal, of object and subject, of seemingly incompatible opposites.<sup>231</sup>

Perhaps Pythagorean musicians were not so very different in their attitude from New Age musicians, except that they didn't have to *reconnect* with a universe of a paradoxical nature. New Age wants to step beyond the constrictions of the dualistic thinking mind with non-conceptual stillness, which, in the words of Eckhart Tolle, 'is the only thing in

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<sup>231</sup> Plato, too, expressed the paradoxical in the *Timaeus* when he struggled with the mysterious *Chōra* (*Timaeus* 48e4). In Neoplatonist theurgy, a paradoxical presence of the sacred in the material was expressed by Iamblichus (*On the Mysteries* II-9). The paradox has definitely returned, I think, with new physics and non-dualism (Verelst 1999).



the world that has no form. But then, it is not really a thing, and it is not of this world' (Tolle 2003, 8). 'Our collective awakening', writes Steve Taylor, 'means regaining what we lost at the same time as gaining something new' (Taylor 2017, 261). In Platonic imagery, New Age needs a guide to lead consciousness out of the cave of the language-based mind to reconnect with the realm of the sacred, and New Age music may come to serve that purpose.<sup>232</sup>

In terms of music, the world is certainly entering a new age. Today, more people listen to music than ever before in the history of the world (Storr 1992, xi). The standard *A History of Western Music* concludes its survey after a thousand pages thus: 'In some respects, we are surrounded by more music than we can ever consume. But perhaps we are also returning to something akin to the practice of music long ago, when every singer sang his or her own song' (Burkholder 2014, 1009). What is arising is a form of music with an aim, *applied* music, turning music into a spiritual and holistic practice. In line with Pythagorean-Platonic philosophy, it aims at active surrender to healing motions of body and soul, akin to motions in nature and in the world soul. New Age music is not about perfection, but about transformation. I think that the core of this music is the sacred creative force that is driving it, not its style or form or message. It can be rock, classical, world music or whatever genre, depending on the preferences of the listener, rather than some fixed form.<sup>233</sup> The essential feature of New Age music that connects it with the Pythagorean tradition is not entertainment, nor the intellectual reflection of speculative music, as proposed by Joscelyn Godwin. Rather, it is its purpose to transform, as a new, exoteric form of art, revealing a paradoxical, shared transcendent meaning of music as present *in the moment* of performance. It exemplifies the relevance of the ancient paradox of star music by its intention to be playful, symbolic and festive.

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<sup>232</sup> See Plato's allegory of the cave, *Republic* 514a–520a.

<sup>233</sup> 'Whatever works for you', stressing the cultural condition of music.

## 10. Conclusion

As a conclusion to this thesis, I would like to outline my personal journey through different stages of understanding of the idea of cosmic music. At the start of my research in 2014, I was aware of the ancient concept of cosmic music in my mind, which I sometimes recognized in the music I made or heard. I assumed that the connection was based on the mechanism of psychological projection, so familiar in contemporary thought. From that perspective, 'star music' was a clear example of an archetypal image and its projection onto actual music. With his concept of the archetype, Carl Jung had connected the world of antiquity with modern psychology.<sup>234</sup> However, Jung had next to nothing to say about music. Musical interpretations of Jung's archetypal psychology by his followers positioned music as a therapeutic technique to assist the imagination, rather than as a mode of consciousness in its own right.<sup>235</sup> At the time, I was asked by the Dutch Jung Society to give a lecture on 'Jung and the Afterlife'. As I worked my way through Jung's memoir, I noticed that, in old age, Jung reversed his view on psychological projection, and stated that it is the unconscious that projects individual consciousness, not the other way around (Jung 1995, 355-357). In terms of music, this meant that my music is making me, and cosmic music is creating the world. Even if that made some sense as a theory, it contradicted common sense and it challenged the direction of my research.

I adopted Kripal's method of reflexive re-reading focussed on consciousness, because it was flexible enough to allow the use of other models of reality, alongside the materialist or traditional psychological perspective. Delving into the history of consciousness studies, I came across such theories as 'Mind at Large', the 'filter theory' of consciousness and 'panpsychism'. These were enlargements on the scientific model of reality which accord better with the musical, the irrational, the magical and the sacred, and thus also with the ancient world. I explored the philosophy of panpsychism as a new scientific paradigm, which promised to be a door from antiquity into contemporary academia. However,

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<sup>234</sup> For example, Jung has called the archetypes 'myth-forming structural elements in the unconscious psyche, ... primordial images' in C.G. Jung and C. Kerényi (1949) *Essays on a science of mythology*. New York NY: Princeton University Press, 71-72.

<sup>235</sup> See for instance Bonny, H. (2002) *Music & Consciousness: The Evolution of Guided Imagery and Music*. New Braunfels TX: Barcelona Publishers.

philosophical contemplation was left behind as soon as I stepped in the experiential space that is the actual practice of music. When the question came up of how to turn these theories into sounding music, I felt that all the answers, ranging from ancient 'planetary chords' to contemporary mantra singing, were not quite satisfactory. The chasm between the experience of music, at the speed of sound, and the detached philosophical contemplation of reality seemed to defy any of my attempts at bridging the two.

A side path helped me to overcome the problem. It was the proclamation by Eckhart Tolle of the dawn of a New Age of consciousness. Tolle articulated in a crystal-clear way, presumably from experience, the paradoxical nature of reality.<sup>236</sup> It slowly dawned upon me that the paradox was the best form to point to a synthesis of the many opposites that had come up in my research. Star music is a paradox. Truth is beyond words, just like music. It allowed the connection between consciousness and the cosmos to be a mystery. My idea was confirmed when I read the following passage in John Tavener's autobiography:

I went for a walk one evening, during one of those wonderful winter sunsets that you get in Greece, and suddenly had, I suppose, what they call an out-of-body experience. I suddenly thought, I'm not a person, I'm just a piece of music. I could only see myself as music. It remains a total mystery to me (Tavener 1999, 85).

As a focus of my research, the paradox was at once satisfying and disappointing. It facilitated stepping beyond unsurmountable restrictions in a profound way, but it did not result in a clear, objective, academic statement, nor in a concrete, audible form of cosmic music.

Now, let me move beyond research and do some speculation. For me, the image of the star is a symbol for the divine spark, the *locus* of human consciousness, which is embedded in an invisible ocean of cosmic music. It reveals the sacred mystery of all beings and all creation endowed with a form of awareness, which has ultimately one

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<sup>236</sup> Tolle writes: 'Stillness is the only thing in the world that has no form. But then, it is not really a thing, and it is not of this world' (Tolle 2003, 8). 'The Unmanifested is not only present in this world as silence; it also pervades the entire physical universe as space – from within and without. ... Space and silence are two aspects of the same thing, the same nothing. They are an externalization of inner space and inner silence, which is stillness: the infinitely creative womb of all existence' (Tolle 1999, 113-115). Is Tolle referring to the *chôra*?

source and is thus a harmony. I think that Pythagoras was expressing a holistic experience of consciousness and cosmos, 'Oneness'. This 'awakening' must be of a paradoxical nature to include the opposites it unites. For that reason, I have strong reservations about any form of philosophical monism which defines its essence, be it matter, consciousness, or information. It is a paradox. I would like to imagine that the nature of ultimate reality is somehow 'vibratory'. Mind and matter are derived from it, hearing relays it very directly, tone focusses on its unifying character, music represents it as order, space and time. The paradox of 'star music' is a device to rise above conceptual thought, which is in itself divided into opposites, such as inner-outer, mind-body, ego-other, temporal-eternal. I conjecture that Pythagoras was using the paradox as a way to signify the 'vibratory' nature of his experience, its cosmic dimension, and its energizing and ordering power. The experience restored his consciousness to 'the pristine harmony of the faculties of the soul' (see page 4), which became the cornerstone of his philosophy and had a strong impact on Plato. The relevance of the ancient musical paradox thus lies in its ability to serve as a gateway to the restoration of wholeness, which I recognized by intuition in the thought and music of the past. In some contemporary and New Age music, I sense a direction toward a renewal of the ancient experience of the cosmos as a sacred order, which I believe is connected to a collective shift in consciousness, the dawn of the Age of Aquarius.

This means that, turning to the practice of music, the paradox facilitates the reversal of the usual model of reality; music makes us, not the other way around. Actively engaging with music can strengthen stillness and facilitate wholeness. I do believe, as Hazrat Inayat Khan said, that music will be the global religion of the future, bridging cultural divisions that are the unavoidable side-effect of traditional, language-based revelations or teachings.<sup>237</sup> For the overcoming of divisions, the philosophy and syncretism of the ancient world can be relevant as inspiration, and the study of 'theurgic' music may help to develop techniques for making the 'star music' of the future.

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<sup>237</sup> 'There will come a day when music and its philosophy will become the religion of humanity' (Khan 1991, 8).

When I set out on my journey to research this subject, I hoped to end this thesis by laying down some musical rules for making contemporary ‘theurgic’ music: scales, rhythms, sounds, forms, and more. Somewhere half way through the research, I had to abandon that hope. Increasingly I became aware of the fact that the special experience of music that lies at the heart of the idea of cosmic music was not so much its form, but a quality that came with a spiritual attitude towards music. The more I tried to *think* about music, the less I seemed to be able to surrender to the flow of music, both in composing and performing. Needless to say, this was a frustrating experience. As a way around the problem, I tried different ways of making music; for instance, I participated in a sound mediation for a Zen Buddhism Sangha, I performed freely improvised music for an audience in concert, and I started listening to flowing, relaxing New Age music for woodwinds (Tony Scott, Praful). It seemed that ‘surrender’ was the key to this new approach to music as a spiritual practice. Making music in a state of surrender did not cancel out the acquired skills, but used them for a different purpose. Instead of wanting to evoke the experience of a cosmic dimension by inflating the means of expression (enormous orchestras, complex music, sound amplification, multimedia), surrender to an inner experience of the unlimited could be expressed by just one note. In my musical education, virtually no attention was paid to this approach to music. Stripping music to its essentials seems to be opposed to the tradition of Western music, although some contemporary composers (for instance John Tavener) and performers (for instance Praful) are consciously following that new direction. I felt slightly perplexed by this recovered sense of the interiority and intimacy of music, yet it resonated with my deepest intuitions.

Reflecting on the musical projects I had realised during my research, I decided to present them as an appendix rather than as part of the research, because they did not support the insights I presented in concluding the research. Obviously, my search for the ‘Lost Chord’ has not ended!<sup>238</sup> How to make music in tune with the cosmos is, I suppose, a never-ending quest. I have experienced this research as a preparation for that journey, so to speak as studying the map. Words, however, could never adequately describe the

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<sup>238</sup> *In Search of the Lost Chord* is the title of the 1968 album by the *Moody Blues*, ultimately going back to a poem by Adelaide Anne Procter (See [https://en.wikipedia.org/wiki/The\\_Lost\\_Chord](https://en.wikipedia.org/wiki/The_Lost_Chord)).

reality of music to me. Which road should I take? I came to understand that it is the music itself which teaches me the way, and the only way to learn it is to make that music, or better: to *find* that music, because it is, so to speak, already there. In the words of John Tavener, 'it's up to us artists to find that music' (Tavener 1999, 73). Just as the idea of 'star music' is a paradox to thought, so the sound of 'star music' will always elude rules, notation, recording, or reflection, because its truly magical, extratemporal quality is only present in the moment of its performance, and in the awareness of those who are really present.



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## Appendix 1: Literature review

There have been a number of scholars who have undertaken a contemporary academic approach to the subject of cosmic music.<sup>239</sup> The foundations for the study of the history of the idea of 'World Harmony' were laid by Leo Spitzer (1887-1960) in his paper on the origins of the German word 'Stimmung' (Spitzer 1944/1945). Spitzer studied the semantic properties of the idea, not the musicological aspects. These were addressed by the musicologist Joscelyn Godwin (b. 1945) in his ground breaking paper *The Revival of Speculative Music*, where he presented an overview of modern research on so-called 'speculative music' (Godwin 1982). Speculative music is 'looking at the cosmos musically, and at music cosmically. The philosophers tell us that it is impossible for us to have unmediated knowledge of the external cosmos: we can only know it as it is reflected in our minds' (ibid., 373). Godwin distinguishes between two paths of modern research into speculative music, 'historical' and 'actual', the latter seeking 'to make it a way of thought, even a way of life, for today' (ibid., 374). My research is an attempt to combine the 'historical' and the 'actual' path in the sense of Godwin's article.<sup>240</sup>

Godwin has published the sources of cosmic music in *Music, Mysticism and Magic* (1986) and *The Harmony of the Spheres* (1993). Together with Guthrie's *The Pythagorean Sourcebook* (1987) and a few other sources, they cover the entire field of speculative music (Godwin 1993, xiii). Godwin presents his analysis of cosmic music in *Harmonies of*

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<sup>239</sup> In 1954, the American musicologist Julius Portnoy published what I believe is the first integral treatment of the impact of Platonic philosophy on the history of music (Portnoy 1954). He posits that 'the aesthetics of Western music is rooted in the philosophy of Plato and that the writings of this Greek philosopher still exert a marked influence on music in our day' (Portnoy 1954, x). Portnoy distinguishes four main Platonic theories: '(1) that music has strong ethical implications; (2) that music is a highly effective means to attain a desired emotional state; (3) the traditional relationship of text and tune; (4) distrust towards musical innovation' (Portnoy 1954, 119). Portnoy argues that Platonic philosophy has given music a low status in the category of the arts and has thwarted the creative musician throughout history by imposing moral values on music. I do not agree with Portnoy to put the blame on Plato personally.

<sup>240</sup> On the personal stake in speculative music research Godwin writes: 'Whereas the results of research in the haptic sciences can be shared and reproduced, speculative music is a personal affair: everyone finds in it something personal, whether that be a grand overview of the cosmos, a revisioning of history, a fresh insight into the geometry of nature, or a meditative preparation for life after death. And what one gets out of it depends on what one brings to it. Therefore what awaits future researchers is not a single discipline but a multiplicity of paths, differing from each other as markedly as human beings do' (Godwin 1982, 388).

*Heaven and Earth* (1987), which ‘moves through successive layers of a universe’ (Godwin 1987, vii), first treating the subject of music and Arthur Lovejoy’s *The Great Chain of Being* (Lovejoy 1936/1964), referring to the philosophical theory of the human as a link in a chain of beings between a transcendent God and matter. Subsequently he treats the layers of the composer and the listener, and finally mystical and esoteric theories of a musical universe, describing the historical manifestations of the music of the spheres. To Godwin, the ultimate musical experience is to encounter a void beyond death: ‘we practise through music during life in order that when we die we may catch that ever-open door, that needle’s eye, and willingly leave behind all that we are to vanish through it’ (Godwin 1985, 75). The idea of encountering cosmic music after death was already known to antiquity, for instance as described by Macrobius (early fifth century CE) in his *Commentary on the Dream of Scipio*, paraphrasing Cicero and Plato (Godwin 1993, 65-70).<sup>241</sup> Godwin’s knowledge and insight are paramount, but his research is directed towards contemplation of ideas, and not to any musical practice (Godwin 1987, viii).<sup>242</sup> In my opinion cosmic music is available to all human beings, while living in the material world; for Godwin, only to the intellectually initiated, after death (Godwin 1987, 83-85). I propose to step beyond Godwin’s transcendental view of cosmic music by ‘musicking’ in the here-and-now.

Beyond the sources of contemplative, speculative music covered by Godwin, there is virtually no literature on cosmic music as an independent academic topic. The subject is treated in academic studies of larger areas of interest, such as ancient music, Pythagoreanism and other fields. Cosmic music as some kind of an experience is mentioned by poets, musicians, healers and mystics, but their writings are not considered as sources of academic theories. Cosmic music is largely ignored by the academic musicological debate; for instance, in the 374 pages publicized following the first *International Conference on Music and Consciousness* in Sheffield, UK in 2006, there is no mention of cosmic music. I am, so to speak, out on a limb.

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<sup>241</sup> On Scipio’s Dream, see also chapter 3.

<sup>242</sup> Godwin believes that the highest level of musical inspiration, sufficient to sustain and nourish a whole epoch of creativity, does not correspond to and thus does not require any form of listening to actual sounding music, but is attained by some kind of mystical or philosophic meditation (Godwin 1987, 76; 83).

## Appendix 2: Creative projects

### Case studies

While carrying out my research on ‘star music’, I have composed and performed music inspired by astrological ideas as case studies. Both astrology and creating music were largely new subjects to me and I do not in any way claim to aspire to an academic or artistic standard; therefore, these case studies do not form part of the thesis, but are presented as an appendix.

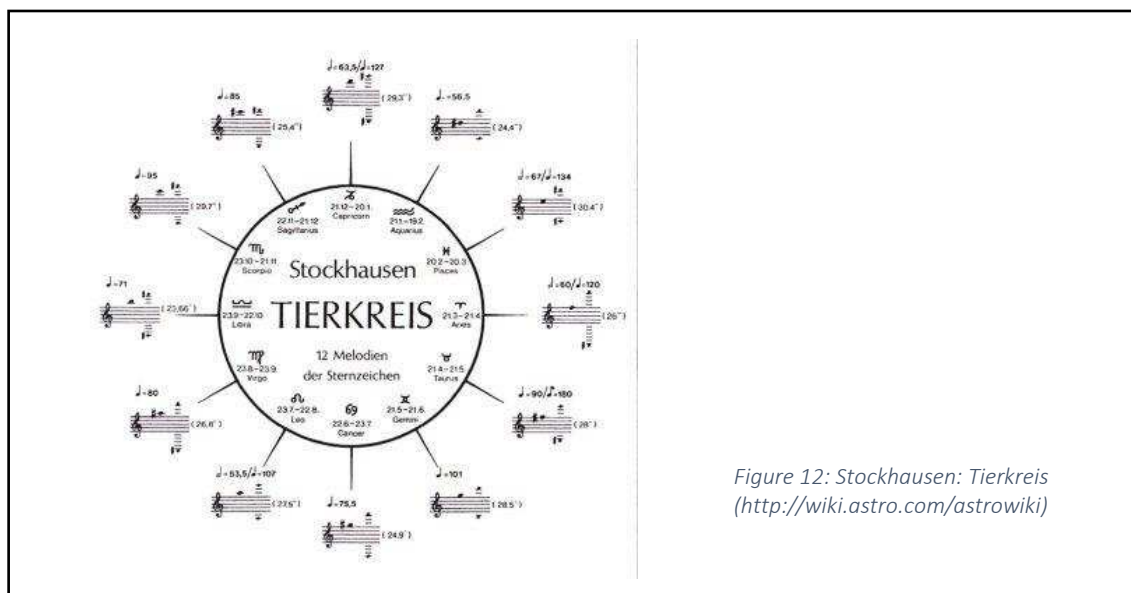


Figure 12: Stockhausen: Tierkreis  
(<http://wiki.astro.com/astrowiki>)

### Music and the stars

When, in 2013, I came across Karlheinz Stockhausen’s composition *Tierkreis*, which comprises twelve melodies on the signs of the zodiac, I thought to have found an example of an informed way of connecting ancient cosmology to contemporary music (Stockhausen 1975) (figure 12). Stockhausen was known to base his compositions on philosophical and religious ideas. Eagerly, I dived into Stockhausen’s world.<sup>243</sup> The

<sup>243</sup> When I found out that he composed *Tierkreis* after reading probably just two books on astrology, I was disappointed; surely such a complex subject requires far more study! According to Michael Kurtz, Stockhausen read *Durchbruch Zur Zukunft - Der Mensch im Wassermannzeitalter* by Alfons Rosenberg and *Die Menschentypen - Die Psychologie der Tierkreiszeichen* by V.M. von Winter (Kurtz 1992, 246 note 4). I cannot recognize much of their content in any of Stockhausen’s compositions or publications.

*Tierkreis* melodies were mathematically constructed to mirror Stockhausen's perception of the characteristics of the star signs, for instance the swing of scales suggesting balance for Libra.<sup>244</sup> *Tierkreis* resembled a set of Indian *rāgas* in Western idiom and it made me wonder if Western music had ever developed a set of astrological musical patterns, and how such a set would be composed. The musicologist Joscelyn Godwin wrote the following about cosmic harmony:

For those who are open to the possibility of cosmic harmony, their cosmos will be demonstrably harmonious. The number of different ways in which this has happened is simply an indication that the essential harmony of the solar system - the thing-in-itself, as it were - is of a scope and a harmonic complexity that no single approach can exhaust. The nearest one can come to understanding it as a whole is to consider some great musical work, and think of the variety of analytical approaches that could be made to it, none of them embracing anything like the whole (Godwin 1987, 118).

While Godwin was thinking of listening to a 'great musical work' of the Romantic tradition, Stockhausen had obviously moved on to composing compact, simple melodies. I felt the need to follow Stockhausen's example by composing simple melodies on the star signs. Connecting astrology to music is, however, not engaging with astrology for the purpose of divination; it is a way to connect to inner archetypal images. Carl Jung has pointed out that symbols take consciousness beyond reason to the world of the psyche.<sup>245</sup> I did not engage with archetypal images as a therapeutic practice, but as an inspiration for art.

Carl Jung wrote that 'astrology represents the sum of all the psychological knowledge of antiquity' (Jung 1971, p. 56). To Jung, the age (æon, Platonic month) of the Fishes is the synchronistic concomitant of two thousand years of Christian development and is ruled by the archetypal motif of the hostile brothers, Christ and Antichrist (Jung 1959, ix; 87). On the sign of Aquarius Jung writes:

The Water Bearer seems to represent the self. With a sovereign gesture he pours the contents of his jug into the mouth of *Piscis austrinus*, which symbolises a son,

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<sup>244</sup> *Tierkreis* is an invitation by Stockhausen to the interpreter to recreate his score for performance, thus pointing to the function of music as an inclusive ritual, which Christopher Small might have called 'musicking' (Small 1998). It is Stockhausen's most performed work.

<sup>245</sup> 'An image is symbolic when it implies something more than its obvious and immediate meaning. It has a wider 'unconscious' aspect that is never precisely defined or fully explained. Nor can one hope to define or explain it. As the mind explores the symbol, it is led to ideas that lie beyond the grasp of reason' (Jung 1964, 4).



a still unconscious content. Out of this unconscious content will emerge, after the passage of another *æon* of more than two thousand years, a future whose features are indicated by the symbol of Capricorn: an *aigokeros*, the monstrosity of the Goat-Fish, symbolising the mountain and the depths of the sea, a polarity made up of two differentiated animal elements which have grown together. This strange being could easily be the primordial image of a Creator-god confronting 'man,' the Anthropos (Jung 1995, 372).

This vision implies a slow-changing form of the godhead, in a meaningful way connected to the progression of the equinox through the constellations of the zodiac. The circle of stars signifies a moment, a year and also a timespan of twelve *æons*, the 'Platonic year' of 25.920 years. Plato refers to this complete circle in his dialogue the *Timaeus* (39CD). The astrologer John Addey (1920-1982) has pointed out that astrology is full of circles and circular motions.

Three of these are usually given precedence: first, there is the circle of the Zodiac, that is, the circle of the ecliptic in which the positions of the planets in their orbits are determined. Secondly there is the circle of the houses, that is, the diurnal circle of the planets as they rise, culminate and set each day. Thirdly there is the circle of aspects as a planet moves from its conjunction with another body round to the opposition and back again to the conjunction. ... All these relationships fall within *a circle of possible relationships*. The circle is the most comprehensive of symbols. In itself it represents the idea of a whole, and in its largest significance the idea of infinity and eternity. ... In the horoscope this scheme of relationships of the one to the many, of the whole to the parts, and of the parts or aspects of the whole to each other is expressed through the symbolism of the circle and relationships within the circle (Addey 1976, 83-84).

To connect music with astrology, I inserted a mean between sound and the heavens. Sound is ordered by the harmonic series, music by twelve equal semi-tone steps of the octave; the heavens are ordered by physical laws, the astrological zodiac by twelve equal signs. Both musical and astrological ordering can be represented by a circle, divided in twelve equal parts. However, the circle of the zodiac is arithmetically divided in  $360^\circ$  by addition, but the octave (2/1) is logarithmically divided in twelve steps of the 12th root of 2 ( $12\sqrt[12]{2} \approx 1.05946$  by multiplication) (Godwin 1989, 235-236). After completing an octave, the sound has doubled in frequency, nevertheless we call it the same note; after completing the circle of the zodiac, time has progressed a year, nevertheless we call it the same day. Many thinkers have developed tone-zodiacs to construct scales on

horoscopes; however, they remain attempts to press two incompatible systems in a unity.<sup>246</sup>

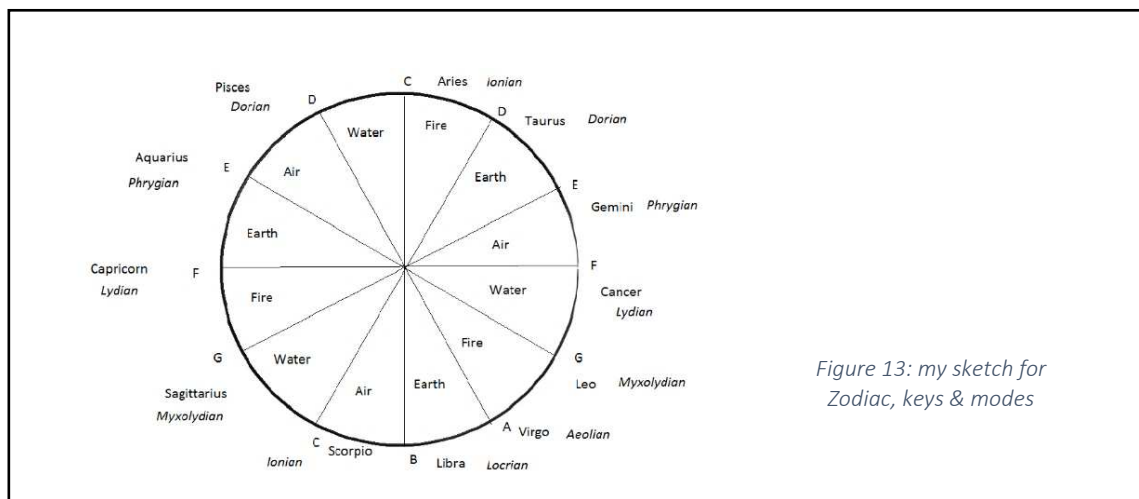


Figure 13: my sketch for Zodiac, keys & modes

## Zodiac

As the creative project of the Master in 'Myth, Cosmology and the Sacred' of Canterbury Christ Church University (CCCU), I composed a set of twelve melodies and short poems on the signs of the zodiac. As an homage to Pythagoras I kept all melodies within the sounding key of C major, connecting the so-called church modes to the star signs following the order that Ficino had introduced in his *Principles of Music* (Voss 2006, 186; see figure 9). Since there are only seven modes the first five have two signs to them. I distributed the instruments according to the triplicities (fire signs are played on soprano sax, air signs on tenor sax, water signs on clarinet and earth signs on the bass clarinet) and choose to express the polarities by playing positive signs in quadruple time and the rest in odd meters like  $\frac{3}{4}$ ,  $\frac{5}{8}$  and  $\frac{7}{8}$  (figure 13).

Zodiac was performed live on September 27<sup>th</sup>, 2014. Victoria Field read out the poetry. We performed the cycle two times to give the audience a good opportunity to let the music sink in. The audience, 26 people, were asked to fill in its questionnaire, asking for their perception of the strength of resonance between the music and the star signs. The audience said that they found the music reverberate on average for 74, 4 % with the star signs. The listeners rated the melodies of their own star sign most of the time reverberating much better than other signs.

<sup>246</sup> See Godwin (1987, 136-154); a good overview of tone-zodiacs is available at the personal website of Roelant Hollander (<https://roelhollander.eu/en/blog-music/zodiac-signs-and-tonality/>).

## *Septimana*

*Septimana* was conceived as a contribution to the CCCU conference 'Re-Enchanting the Academy', on 25-27 September 2015. My plan was to provide the conference with a dance workshop to music inspired by the characteristics of the seven days of the week. It would be an exercise in dancing to the numbers 1-7, feeling number with the body while hearing the musical structures. To that end, the music had to be inviting and based on dance forms like waltz, tango, etc. In the development of the concept I dropped the idea of a dancing audience, because it would probably prevent most people from engaging with their imagination, which enchantment cannot do without. The music consequently shifted to the meditative. I decided to ask the audience to sit, listen and concentrate on their inner images and to give me their feedback by a hand-out questionnaire. The questionnaire, however, was never handed out; instead the audience received a CD with the music, and an A4 information sheet, shown below.

*Septimana* was an exercise in creativity, working with the latest music software. I did not try to be original, but borrowed from existing styles, songs and effects to create music that fitted a mood, an image or a rhythm. I composed seven backing tracks in a week, a tune a day. The next week I added seven instrumental parts, mostly improvised, on clarinets and saxes. When improvising the melodies, I attempted to concentrate on my inner image of the planet/god. The solos were meant to add a living quality to the music, which samples necessarily lack.

The sampled instrumental parts I created in Finale software, which I mixed with the sounds-effects in Audacity software. Improvised solos I recorded with an Edirol device, mixing them with the other tracks in Audacity. The seven tracks I mastered to a CD, which was duplicated externally at MaxDuplication. As the CD is part of a research project, I did not register its rights. A video, using audio and images of gods and planets, I put online on Vimeo, also accessible from my personal website [www.heyning.nu](http://www.heyning.nu). To help the audience keep track of the order of the week I made a PowerPoint with images of the planet to each day.

The project grew in the making. Recurring motives in different tracks like the arpeggio scale, the whole tone scale, the crescendo-diminuendo arc, etc. helped to bring some overall unity to the set. As the days flow into each other, most tracks have a fade-in and fade-out. The length of the tracks I set to 3-4 minutes. I did not yet attempt to structure the tempos by any ratio.

## Practice

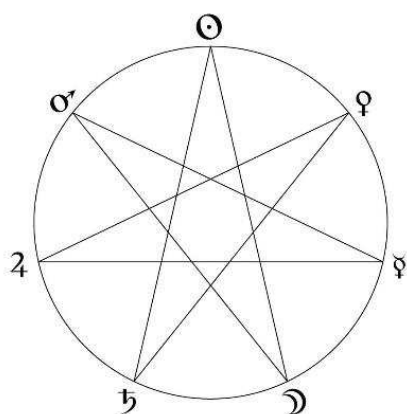
A specific research aim of making *Septimana* was to see what sort of problems and opportunities would arise when applying astrological ideas to music. By taking the days of the week as my inspiration, I was so to speak exploring the heavens on a small scale. The elements I considered were:

- Ancient tuning. I considered working with Pythagorean tuning but abandoned it, because this would exclude working with Finale software, which does not have that option. Pythagorean tuning needs clarity of the sound scape, so very few voices and no sound effects. I will consider using Pythagorean tuning for my next project involving singing mantra-like melodies.
- Instruments resembling those used in antiquity. This would exclude a performance by myself and would not be in line with the thesis aims. But considering this option did trigger a renewed interest in the use of instruments in ancient ritual. Did Pythagoras play the aulos? How about sistras and rattlers?
- Modal harmony. I followed Joscelyn Godwin in his scheme of planet-tones and used them with their church mode as scale: C would be Ionian, A Aeolian and so forth. By chance, if you will, this arrangement did resonate with the gods quite well. However, I allowed myself to occasionally use a bit of modern harmonics. Sometimes I end a track on the dominant seventh suggesting a resolution to the next fundamental, but Sunday resolves to A minor, the key of Monday. Combining modal harmony with modern music was however not easy; tangos are seldom in a major key and who has ever done a blues in F Lydian? Working with modes and scales was only a minor aspect of this project but can be explored further.
- Planetary gods as inspiration: I used the functionality of the gods as exposed by the Roman Interpretation to guide me in my conception of the divine. A mix of ancient Greek, Roman and Germanic characteristics, some astrological inspiration, and some personal fantasy. Soundscapes would provide the listener with a door to the imagination, setting the sphere. The connections to the planetary gods could be worked out in more detail, but then a choice would be needed on the source.
- Number expressed by rhythm: to directly feel number I conceived of a set of meters. The tunes of Tuesday-Sunday are in 2/4, 3/4, 4/4, 5/4, 6/8, 7/4 time; Monday is without a clear meter. It brought to my attention the large possibilities of expressing sacred numerology by rhythm.

- Repetition as contemplation: the backing tracks were conceived as repeating patterns to allow the improvised solo to add a living voice. Entrainment would need a simpler structure and more time per track.
- Performance as a spiritual experience: this would require a well-prepared ritual setting. That was not the case in the September 2015 conference, as *Septimana* was performed with poor equipment, in a small room with limited acoustics, to an audience weary after a long day of talks. Nevertheless, the performance was enjoyed by many.

Below, the handout of the performance is reproduced. →

# SEPTIMANA



Septimana is a suite of musical sketches contemplating the seven planetary weekdays, expressing the characteristics of numbers and divine eponyms using seven keys, rhythms, scales, melodies, sound collages and improvisations. Live performance on wind instruments engages with sampled sounds. It is inspired by my post-graduate research on 'Star Music' in the 'Myth, Cosmology and the Sacred' programme at Canterbury Christ Church University, UK.

Septimana is Late Latin for 'week'. In the world of late antiquity, there was a general sense that the stars were connected to the gods. The seven day cycle of the week is a Sumerian-Babylonian invention and the present assignment of the planetary gods to the days of the week dates from the Greek-Hellenistic era. Seven is the number of celestial objects visible to the naked eye. Their sequence in the week is probably derived from the Chaldean order: furthest (Saturn) to nearest (Moon) to Earth, jumping two planets as in a heptagram. Joscelyn Godwin has argued that the order of the days of the week derive from the Greek Dorian mode applied to the Chaldean order, proceeding by descending fifths (Godwin 1992, 265). I have taken over his scheme as keys for my music to the week days (A-D-G-C-F-B-E) and connect them with the church modes.

When the Roman emperor Constantine officially adopted the seven-day week in AD 321, it had been in use informally since the first century BC. Because Constantine was a Christian convert, he moved the first day of the week from Saturday to Sunday. The seven-day sequence was adopted by the Germanic peoples before their conversion to Christianity, substituting the Germanic gods (except Saturn) with what Jeff Kripal has called 'a polytheistic comparative practice based on the god's function' (Kripal 2014, 13). Within a few centuries, the seven-day week spread from the Mediterranean over much of the world. I follow the contemporary order by starting from Monday, giving each day's music a progressive meter: 1 - 2/4 - 3/4 - 4/4 - 5/4 - 6/8 - 7/4. As the week has a circular pattern, the music should be played 'in repeat', forever.

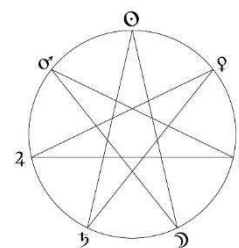
Eduard Heyning

info@heyning.nu www.heyning.nu

## References:

- Godwin, J. (1992) 'Speculative Music: the Numbers behind the Notes' in: *Companion to contemporary musical thought*. Vol. 1, p. 246-261. John Paynter (ed.). London: Routledge.
- Kripal, J. J. (2014) *Comparing Religions: Coming to Terms*. Chichester: John Wiley & Sons.

# SEPTIMANA



Monday: 1. Luna

The first day of the week is set in the dream world of Luna, the Moon goddess. Against the backdrop of a Mediterranean beach, a harp is playing Aeolian scales to a soprano clarinet, centring on A, suggesting eternal recurrence, Oneness.

Tuesday: 2. Mars

Forward movement on two legs characterises the second day, ruled by Mars (or Tiw) and his marching soldiers. On solid ground, timpani give the beat to a brass section, suggesting Roman military instruments. A soprano saxophone adds battle cries in a Dorian mode on D.

Wednesday: 3. Mercurius

Mercury (or Wodan) rules the third day, in which the pleasures of eloquence, learning and poetry bring dawn to winged creatures. A triple rhythm invites graceful movement to the sound of a string quintet; a volatile Myxolydian melody on D is added by an alto saxophone.

Thursday: 4. Jupiter

On the fourth day of the week the charged atmosphere creates lightening and controlled desire, ruled by Thor or joyful Jupiter, gods of thunder. A Tango in C Ionian offers a fourfold beat to the roar of a tenor saxophone.

Friday: 5. Venus

On the fifth day there is time for celebration, ruled by the goddess of love, Frige or Venus. Nature rejoices in the fertile maturity of spring. Exotic percussion instruments play a Lydian blues in F to a fivefold rhythm, to which an alto saxophone adds a sparkle.

Saturday: 6. Saturnus

The long-lost golden age of Saturn is the theme of the sixth, rainy day of the week. Saturn has a melancholy disposition, expressed by a melody with a recurring Locrian triad on B in six eight time by a Romantic ensemble, answered by a soprano saxophone.

Sunday: 7. Sol

The day of the Lord or Sol Invictus is announced by church bells. The Cross of Christ or the Tree of Life is invoked by the sound of a bass clarinet over a slow seven-note Phrygian *cantus firmus* on E. The week has been fulfilled and the soul is drawn into regeneration on a final A minor chord, leading to Monday.

### Canterbury Zodiac

In 2016, I was given the opportunity to present a project at the Midsummer Festival on 'Symbol, Magic and the Sacred' of Canterbury Christ Church University. Victoria Field (poetry) and I (music) presented a work-in-progress called *Canterbury Zodiac*, inspired by the zodiac roundels in Canterbury Cathedral. As with *Septimana*, I created music, mirroring the ancient order of the heavens and the mythopoeic characteristics of the stars, this time the signs of the zodiac. I allocated tonalities, modes, and time signatures to the different signs of the zodiac on an intuitive basis, using a variety of styles and instruments to achieve maximum diversity.

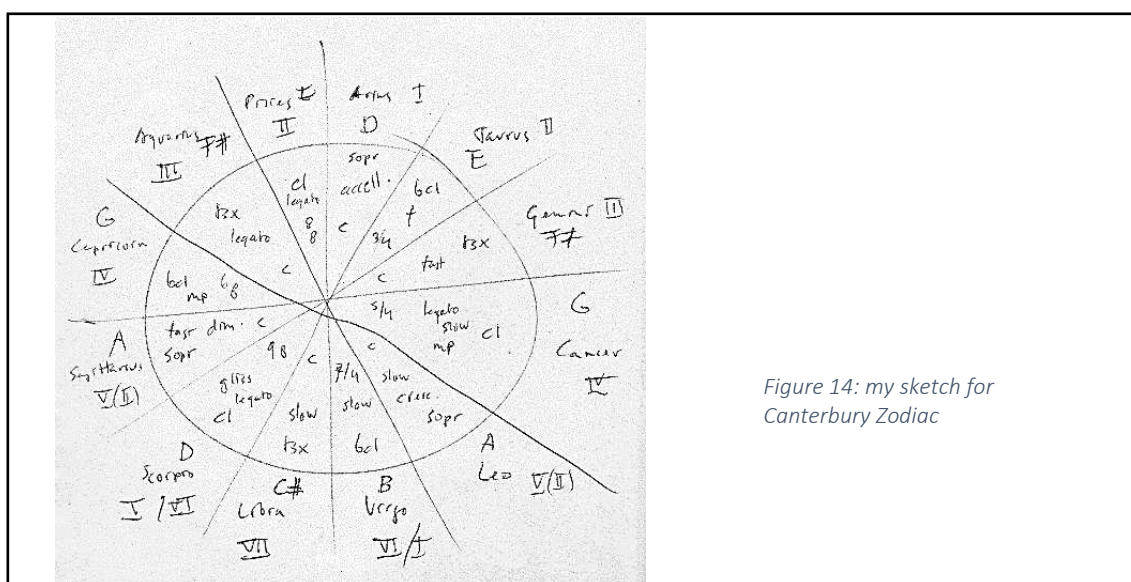


Figure 14: my sketch for Canterbury Zodiac

### On reflection

Looking back at the case studies presented here, and bearing in mind the reaction of my audiences, I feel they attest to the main conclusion of the thesis, that the special quality of music to transform consciousness is not the result of the intricate structure of a musical composition, nor of the harmonic quality of the tone or the entraining pulse of rhythm. Just as the paradox of 'star music' points beyond itself, a performance of music can reveal something that is no-form, no time, no space. Music may bring about an awareness of stillness and wholeness, shared between musician and audience. As Ficino said, for this to happen one needs the right kind of music, the right intention of the musician, and the right time and place.